THIS WEEK'S NATIONAL PETROLEUM NEWS

The Recognized Authority on News, Markets and Technical Developments in the Oil Industry

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COMING MEETINGS

Kansas Oil Men's Assoc., and Kansas Oil Exposition, Broadview Hotel, Wichita, Apr. 1 to 4.

Michigan Petroleum Association, Statler Hotel, Detroit, Mich., Apr. 2 and 3.

American Petroleum Institute, Division of Production, Southwestern District, Washington-Youree Hotel, Shreveport, La., April 9, 10.

Western Petroleum Refiners Association, Elms Hotel, Excelsior Springs, Mo., April 7, 8.

Petroleum Industry Electrical Association, Tulsa, Apr. 11 to 13.

American Chemical Society, Petroleum Division, Kansas City, Mo., Apr. 13 to 17.

American Petroleum Institute, Division of Production, Pacific Coast District, Los Angeles, Apr. 14.

National Oil Burner Show, Convention Hall, Detroit, Mich., April 14 to 18.

American Institute of Mining and Metallurgical Engineers, Open Hearth Conf., Detroit, Apr. 16, 17.

National Petroleum Association, Cleveland Hotel, Cleveland, O., Apr. 16, 17, 18.

Oil Equipment & Engineering Exposition, Petroleum Bldg., Houston, Tex., Apr. 20 to 25.

American Petroleum Institute, mid-year meeting, Mayo Hotel, Tulsa, Okla., May 13, 14, 15.

Natural Gasoline Association of America, Tulsa Hotel, Tulsa, Okla., May 13, 14, 15.

International Petroleum Exposition and Congress, Tulsa, Okla., May 16 to 23.

Independent Petroleum Assoc. of America, Tulsa, May 21.

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L. D. Mann

L. D. Mann, general manager of Refineries for Empire Oil & Refining Co., has been in the oil business all his working life.

Graduated from Union College in 1917, in chemistry and electrical engineering, he immediately went to work with Dr. Sidney Born, then chief chemist for Empire, at Okmulgee, Okla. Later he was sent to the plant at Oklahoma City, and was made superintendent of that refinery in 1919. It is interesting to note that, on the site of that refinery, since dismantled, Empire has important crude production, unknown and unsuspected in 1919.

Late in 1919 he was transferred as superintendent to the Cushing, Okla., refinery. It was while at Cushing that he married. Transferred to Gainesville in 1921 as superintendent, he remained there until 1926, when he was promoted to the assistant general superintendency, under H. W. Camp, with headquarters at Tulsa. When Camp was promoted to the managership of the Refining department, Mann became general superintendent, in charge of all Empire refining activities.

Of quiet demeanor, "L. D." as many friends know him, is interested in golf, and according to his own statement, in "pinochle".

NATIONAL PETROLEUM NEWS

VOLUME 28 NUMBER 13

Alky-Gas Issue May Take Prominent Part In 1936 Campaign for Farm Votes

By Teletype
WASHINGTON, March 24

THE question of using alcohol as a motor fuel has come to life again and may become a lively issue in the coming elections.

Hearings are scheduled to open March 26 on the bill (HR 11398) of Congressman Lea, California, to set up a fuel research commission to develop "renewable sources of supply" for motor fuel.

Although use of the word "alcohol" is carefully avoided in the bill, it is known that its sponsors have in mind that the fuel commission would center its activities on the manufacture of anhydrous alcohol from agricultural crops for use as a motor fuel.

Chester Davis, administrator of what remains of the Agricultural Adjustment Administration after the Supreme Court's decision, is said to be strongly supporting the Lea bill. Indeed, it is reported that he had a hand in drafting the measure.

Decision of the Lea bill's supporters to press the measure at this time coincides with completion of The Chemical Foundation's plans for subsidizing production of "power alcohol" at a privately-owned plant in Kansas.

The re-awakening of interest in alky-gas recalls the prediction of Chester Davis that this issue would be prominent in the

By A. M. Petty
N. P. N. Staff Writer

coming elections. Speaking over the radio in October about farm relief proposals Davis said:

"Then there's the school of thought that claims new industrial uses for farm products and wastes, such as fuel alcohol to be made from agricultural products, will absorb the output of our acres, and so all will be well. My guess is that we will hear considerable of that in the next campaign, too. I'm for it—as far as I know, so is everyone else in the Department of Agriculture who has thought about it. It is in no sense a partisan issue and cannot be claimed as one."

Mr. Davis is well-remembered around Washington for his activities on behalf of Iowa farm groups who, during the Hoover administration, put on an intensive campaign to force the use of a 10 per cent blend of alcohol in gasoline by means of a federal tax.

In South Dakota, Chan Gurney, son of D. B. Gurney of "House of Gurney" which has been marketing an alky-gas blend as motor fuel for several years, is campaigning for United States Senator. In his speeches he has suggested "power alcohol" as a means of farm relief.

Although the Administration has worked out a plan for continuing the farm benefit payments, officials hope that some new sources of income for the farmer can be devised. The use of farm products for "power alcohol" is one plan strongly backed by certain groups.

According to backers of the Lea bill, the oil industry cannot validly object to having a "neutral" government agency test all the aspects of alcohol as a motor fuel.

Congressman Lea will sit as chairman of the sub-committee which will begin hearings on his bill March 26. Other members are Congressman Cole, Md. (chairman of the Special Oil Sub-Committee); Peyser, New York; Cooper, Ohio; Eicher, Iowa; and Merritt, Conn.

MR. LEA is planning to invite to testify at the March 26 hearings, the following: Dr. Lyman J. Briggs, director of the National Bureau of Standards; Dr. Leo M. Christensen, consulting chemist of The Chemical Foundation, Inc., and long identified with alky-gas projects; Chester Gray, American Farm Bureau Federation, and Frank Brenckman, National Grange.

With Congress still several months away from adjournment, it is not beyond possibility that a determined drive may put across the Lea bill. It carries no appropriation, although authorizing the use of about

$1,000,000 lying in a special fund in the U. S. treasury.

Duties of the fuel commission would go beyond investigating and developing "renewable sources of supply" for motor fuel. The commission is authorized to acquire "demonstration plants" and do just about what it thinks necessary to promote the use of gasoline substitutes. It would have the power to test public reaction to the new fuel. Sales by the government agency to the general public are authorized.

The Fuel Research Commission would consist of the director of the U. S. Geological Survey and the director of the Bureau of Mines, Department of the Interior; the director of the Bureau of Standards, Department of Commerce; the director of the Bureau of Plant Industry and the director of the Bureau of Chemistry and Soils, Department of Agriculture.

The bill apparently contemplates trying out some plans of the AAA which, for one reason or another, it has not been able to put into effect.

Several months ago the AAA applied to the WPA for a grant, said to be about $625,000 to build a demonstration plant for "power alcohol" experiments. This application was turned down and officials now decline to discuss it.

About the same time, according to reports here, the AAA conceived the plan of granting a subsidy to privately-owned industrial alcohol plants to encourage the production of "power alcohol."

The plan is said to be substantially, as follows:

The AAA, with funds from a special account, would subsidize "power alcohol" production up to 15 cents a gallon provided the company would agree to sell this alcohol at not over 25 cents a gallon to co-operative oil companies for blending with the gasoline they sell.

At one time recently negotiations were said to be under way with three of the largest industrial alcohol companies. According to reports at least one contract is reported to have been signed on terms similar to the plan outlined above. Production of about a million gallons of alcohol is said to be involved.

It is difficult to learn the status of these plans. But lately there have been rumors that they have hit a snag. One version is that the co-operative oil companies were reluctant to start selling the blended product without assurance that the subsidy would be continued.

Some AAA officials, on paper, have developed the "power alcohol" plan to a point where they are figuring out new uses for the by-products. In doing so, they have closely studied operations in Germany. In that country, alone, it is said, there are upwards of 36,000 distilleries while in the U. S. there are only 67 industrial alcohol plants.

THE plan in Germany is for each farmer to cart his waste farm products—cull potatoes and fruits, low-grade grains, and similar crops—to the nearby alcohol plant (if he doesn't have one of his own). He brings back the protein feed and other by-products and leaves the alcohol. Much of the alcohol is used as a blend with gasoline for motor fuel.

This plan, some officials believe, is the most practical for the U. S., especially, since it does away with long freight hauls to the larger industrial alcohol plants. At present there are annually about 200,000,000 tons of farm products suitable for making alcohol, permitted to "waste," which could be turned into a source of income for the farmer, it is contended.

Looking far ahead, the proponents of this particular plan, envision the day when the oil companies will convert their refineries into distilleries. The oil companies would buy up the crude alcohol from the field distilleries and re-process it so as to make it suitable for motor-fuel. Because the oil companies have existing distribution facilities, backers of the alky-gas project hope that eventually they can be persuaded to take it up.

In their arguments, the advocates of a "renewable source of supply" for motor fuel emphasize that petroleum is an "irreplaceable" natural resource and predict a shortage within a few years.

Besides the AAA, the rural resettlement administration is reported to be interested in "power alcohol." Professor Tugwell's RRA is reported to be looking into the plan as a possible source of income for subsistence homesteads.

There is some backstage talk about the "career men" in the federal departments—practical scientists who antedate the New Deal, are not as "sold" on the feasibility of alky-gas, either from an economic or engineering standpoint, as its sponsors.

Dr. Leo M. Christensen, seems about to have his wish fulfilled for a practical demonstration of the alky-gas plan.

The Chemical Foundation, Inc., a semi-official organization which took over the German chemical patents during the world war, has completed a contract with the Bailor Manufacturing Co. of Atchison, Kans., to produce "power alcohol."

Beyond confirming the fact that the contract has been made, officials of the Chemical Foundation will give out little information at present. However, they promise "full details" shortly.

Reports of the grant or subsidy made to the Bailor company by the Foundation ran up to $200,000 with one "guess" as low as $25,000. The reputed deal is that the company will produce alcohol from low-grade corn by means of a "new" process. Capacity of the plant, after alterations have been completed, has been estimated as high as 10,000 gallons daily.

That capacity figure sounds somewhat high. It would mean using about 25,000 bushels of corn each day.

Details of what will be done with this large amount of alcohol have not been disclosed. One official of The Chemical Foundation said that for the present they were only interested in proving that "power alcohol" can be produced cheap enough to justify it economically as a motor fuel.

Inasmuch as Dr. Christensen worked with the AAA in its plans for subsidizing production

(*Continued on page* 15)

The Editor's Viewpoint

Low Government Bids Endanger Tank Car Market

By Warren C. Platt, *Editor*

WHEN the big companies bid the tank car price or less for other than tank car deliveries to the government for its gasoline business, those companies cannot blame other buyers, including independent jobbers, for questioning the justification for the present level of the tank car market.

We who have been observers and reporters of the tank car markets of the country for a quarter of a century, cannot but feel extreme uneasiness over this flaunting of that market by these few major companies. NATIONAL PETROLEUM NEWS has for all these years consistently contended that a firm, fair and profitable-to-the-refiner tank car market is absolutely essential to the welfare of the whole oil industry. We have said that only with such a market can a fair price be paid for crude oil, on which price a vast army of people and industries depend for a living.

We also have maintained that a fair and stable retail price structure can only be built and maintained on a firm and fair and profitable tank car market. We have criticized vigorously for years major companies for disregarding the existence of such a market. We have said those companies should know all about that market, should be in it as both buyers and sellers, because only by every one taking part in such a market can it be given the proper breadth and substance to support and protect the industry.

Instead of this policy, the majors for years ignored this tank car market even though they based contracts on it, and, unfortunately most of the independent refiners and jobbers also have ignored the market to the extent of each thinking his business was "so great" that he must contract all sales and purchases. These refiners and jobbers have based these contracts on that tank car market, with the result that the sales of millions of gallons of products a week are priced by the sale of a few cars from a few refiners to a few jobbers.

We have said that this is no way to treat a market that the industry is using for contract and price basing purposes and which is one of the most important price factors in the industry. We have urged that more people buy and sell openly in this market or else that the industry quit using it for contract price purposes, even though there seems to be at the moment no other easily practicable way to arrive at a contract price.

We have said and still think that it will be an easy matter for the industry to build this tank car market up so that it has some real volume and represents the opinions of a large number of buyers and sellers each day, instead of the opinions of only a handful or less, for all a market is is just the opinions of those in it as to the value of the merchandise tranferred there.

For every company to be active daily in that market will not be so pleasant for those actually engaged in the buying and selling, for each sale means an exercise of and a battle of wits. To be brutally frank about it selling entirely by contract on the tank car market is a lazy and indolent way to sell because the argument of price never comes up and that is always the most disagreeable part of every sales transaction. It is the point at which both buyer and seller must use wit and quick thinking, knowledge of the business and real courage. To sell on a price that is fixed by some one else at some future time is just plain ducking this argument. It may permit both buyer and seller to get out the sooner and celebrate the "sale" with the proper libations but it is not selling and it is not buying.

IF ANY selling has been done it has been by the price reporting medium which, by its right conduct all these years, has convinced both parties that its prices are fair and as accurate as the state of the market permits. But, sad to relate, too often do both refiners and jobbers, though not necessarily in the same transaction, seek to detract from the sales job of the price reporting medium by questioning, and generally unfairly so, the job it is doing for these traders who are too indolent each to have and fight for his opinion as to what a fair price for the product should be.

And now, when the tank car market is getting a bit more attention from the big companies, but still is none too strong, along come some of the big companies and inform the government, in no confidential manner, that—in effect—the tank car market really is too high and that these majors can do business with the government and make a profit, by cutting that market to the extent of throwing in truck deliveries for small quantities and that these companies can do this to the government as a consumer.

In most businesses the man who takes merchandise in bulk and passes it on to the re-

tailers and consumers, to people whom he keeps active as customers of the merchandise, whom he keeps sold on its use, whose complaints he handles, whose sales work he helps, to whom he gives credits, is the man who gets and who is entitled to get the lowest price from the manufacturer, a price lower than any retailer or consumer should get.

Yet now come these big companies and say that the government as a consumer is entitled to the lowest price, a lower price than this necessary distributor, a lower price presumably than the oil companies own bulk stations are entitled to.

That, of course, does not make sense. What these big companies do say is that the present tank car price is too high.

NATIONAL PETROLEUM NEWS, from its general knowledge of the industry insists that these companies are wrong and that the present tank car price is decidedly not too high. We will not argue whether it is an eighth or a quarter too much one way or another, but we do maintain that its general level for quite some time is not too high and that the refinery of every company—integrated and non-integrated —has not been making any unreasonable profit, if it has been making enough. That the marketing end of many companies has not been making money is due to something else, to trouble right in the marketing division and which cannot today be blamed upon the tank car price.

We believe that every observer of any market will agree that only one result can come from these cut prices for government business and that is lower prices to other consumers and lower tank car prices. It does not stand to reason that the other big buyers of gasoline will sit idly by and see the government get a cut price without going after it themselves. Some of these extra big buyers have shown more skill in beating down the sales prices of oil companies than the oil companies have displayed in maintaining them. No one can blame the jobber, whose buying price is thus held up to public ridicule and he himself made to look like a fool, for getting mad and putting the pressure on for lower prices.

When the general crash in oil prices comes, and it is bound to come if this policy is maintained, because other companies will have to adopt it to get the government business, then for once the evidence will be sharp and clear that the blame is solely on a few major companies who have talked much about intelligent price conduct and then stepped out on the boys.

We realize full well that the publicity that NATIONAL PETROLEUM NEWS has been giving to these cut prices to the government does not have a good effect on the market. We also realize full well that the effect of this editorial will not be helpful, that is it will not aid in holding to present prices, except as it points the finger to errors and evils of pricing that should be changed.

But we also realize from years of experience that a cut price eventually gets generally known; that if the price cutting policy is continued the price cutting spreads. It was only a matter of a few months whether the present reasonably profitable markets would be destroyed by this price cutting, if we had ignored the bids of these companies. We believe the sooner the industry knows where it stands the better. If these major price cutters are going to continue cutting the price then let's have it and get it over with, even though the fracas may be a bit bloody.

Some perhaps supercilious people have at times criticized us for having an opinion of the oil industry on the ground that we are not "in" the oil industry. We are very much "in" the oil industry in regard to everything that hurts the industry and everything that helps it. We have a sizeable business, far larger than most oil jobbers, employing many people. We cannot possibly make a profit if the industry does not make a profit. The industry must make a profit first before we can hope to make one.

Our business is far more sensitive, and it is true of every other business paper in the country, than the industry that it works for. During the present depression the oil industry lost only a few per cent of its volume, but we lost more than 65 per cent of our volume and other oil papers lost more than that. We and the other oil papers are recovering slowly. We all have picked up only a small part of our lost volume while the oil industry has recovered and gone ahead and this year looks like the most marvelous year ever for volume.

SO WE believe we have every right to be alarmed at this big threat to the present level of the tank car market, just as we felt alarmed at the threat of overproduction of crude oil and and the production of "hot" oil on the crude price; just as we are still much alarmed and discouraged at the costly and unprofitable prices and policies that obtain in the marketing of petroleum products. The sooner the marketing end of the oil industry for both big company and small jobber is put on its own base with its own balance sheet and profit and loss statement, the sooner the marketing of oil is made to stand on it own financial feet, the better for NATIONAL PETROLEUM NEWS and every other oil paper, and the better for the oil companies and the industry as a whole.

We sincerely hope that the oil companies will stop these losing practices at once and before what promises to be the best gasoline consuming season in the history of the industry is upon us. We have our golden opportunity this year at last, an opportunity which, if properly handled, will bring better pay to every oil company employe, better business and probably better prices to every equipment man supplying the industry and hence better wages to his employes—our gasoline customers; we have an opportunity which will permit the oil industry and its associated industries to make a generous contribution toward the country's unemployment problem and the country's general return

to prosperity. We can do all this by delivering a better product than ever before through more efficient facilities so far as the public's needs are concerned, and at a reasonable and low price to the public. We can do all this without any advance in price to the public; but we cannot do it if members of our crew drill holes in the bottom of our industrial ship.

The Oil Industry Maintaining Employment

THE challenge by President Roosevelt, in his message to Congress on the new relief program, that industries make greater efforts to increase employment by concerted action, should be taken up by the oil companies through not only showing the extent to which they have already gone in this matter but also the handicaps that are placed on their adding to employment in the trend of taxation and even by some of the New Deal legislation itself.

It is most unfair to place on the doorstep of industry the responsibility for adding to its payrolls any considerable proportion of the 10,000,000 or 11,000,000 persons still classified as unemployed. The President, in his recent message on relief, states unemployment in terms of 5,300,000 families and unattached individuals, which is probably a saner way of looking at the matter.

In any event, and as has been too little emphasized by industry in this country, the number of persons engaged in manufacturing and in wholesale and retail trade—industry in a broad sense—is but a minor percentage of the total number of people who earn a livelihood, around 18,000,000 in busiest times, as compared with 48,000,000 jobs in the country. The remainder are those engaged in farming, in public and personal service classifications, in transportation activities, in building and highway construction and so on. While it is the duty of industry, which is organized, to add to its payroll as far as it can without by so doing endangering its own security and thus the jobs of many now employed, it should not be put in the light of having within its power to take up all the unemployment slack.

The oil industry's great effort in increasing employment under the code is a matter of comment by labor authorities at Washington and later surveys have shown the oil companies generally have maintained the wage and hour standards set by the code. In a recent survey by the Secretary of Labor of firms receiving government contracts, it was disclosed that 71 per cent of employes working for these firms were getting as much or more pay for the same amount of work as they were when the NIRA died. Oil producing companies were in the highest rank in this matter, with 96 per cent of their employes drawing the same wages or better than under the code. The American Petroleum Institute's latest study of employment in the oil industry shows a total of 999,800 individuals employed, earning nearly one and a quarter billion dollars per year.

The oil companies are endeavoring to maintain this rate of employment in spite of its carrying one eleventh of the tax bill of federal, state and local government, in amount $1,125,000,000 in 1935 and very close to the oil industry's total payroll. To its own payroll, in effect, the oil industry should add the several hundred thousand who are gaining a livelihood as public employes or in some form of employment made possible through the tax burden the oil companies are carrying.

As against the efforts of the oil companies to maintain employment at a high rate is also the effect of the state chain store tax laws, the social security laws and so on which penalize the oil companies, through taxation, as their direct company activities are expanded and more employes are put on their payrolls. Many thousands of workers have been dropped from the companies' payroll as employes in the states which have a high rate of taxations on chain stores and apply the tax against service stations. While the companies have gone to great lengths to see that these men were retained under the status of dealers, their hours and earnings are no longer within the control of the oil companies.

Alky-Gas

(*Continued from page* 12)

of "power alcohol" and distribution through co-operative oil companies, there are some who believe that efforts will be made to market the Bailor company's product through the oil co-operatives.

The Bailor plant, according to records of the Federal Alcohol Administration, produced only 227 gallons of alcohol during the last fiscal year.

Records of the FAA show that there are 67 industrial alcohol plants in the U. S. (not counting the bootleg plants). Their total daily capacity is about 1,350,000 gallons of 100-proof alcohol. That is about 400,000,000 gallons a year of 100-proof alcohol, or the equivalent of around 200,000,000 gallons of 190-proof alcohol which would be the kind used in motor fuel.

Consumption of tax-paid gasoline in 1935 totaled 17,632,000,000 gallons. Even with a ten per cent blend of alcohol in gasoline, production of 1,763,200,000 gallons of "power alcohol" would be required. That is nearly nine times the total capacity of all plants in the U. S. today. So, it seems that government scientists are correct in stating that it would require ten years to build up sufficient capacity to produce enough for even a ten per cent blend of alky-gas to run all motor vehicles in the U. S. today.

Alcohol Gasoline to be Discussed At Chemical Society Meeting

A CLEVELAND SYMPOSIUM on motor fuels will feature the meeting of the American Chemical Society in Kansas City, April 13-17. It will be a joint session of the division of industrial and engineering chemistry, division of petroleum chemistry, and the division of gas and fuel chemistry. Dr. George Granger Brown, University of Michigan, will preside.

The division of petroleum chemistry will have a separate session April 15. Polymer gasoline, alcohol blends, diesel fuel, and propane will be discussed as fuels and high-speed motion pictures of gasoline engine flames will be shown. A new type vapor pressure apparatus will be described and the effect of sulfur compounds upon lead response discussed.

Polymerization will be in for more discussion at the April 15 session. A number of laboratory studies involving both physical and chemical properties of hydrocarbons will be the predominating type of material presented. The program for the two days is as follows:

Division of Gas and Fuel Chemistry

O. O. Malleis, Chairman
Alden H. Emery, Secretary
Herbert Gerland, Local Assistant

Tuesday Morning and Afternoon

Symposium on Motor Fuels
George Granger Brown, Presiding

Joint Symposium with the Divisions of Industrial and Engineering Chemistry and Petroleum Chemistry.

Gustav Egloff. Polymer Gasoline.

Gustav Egloff and J. C. Morrell. Alcohol Gasoline in Motor Fuel.

Leo M. Christensen. Alcohol-Gasoline Blends.

Oscar C. Bridgeman. The Utilization of Ethyl Alcohol — Gasoline Blends as Motor Fuels.

L. C. Lichty and E. J. Ziurys. The Performance of Engines with Gasoline and Alcohol as Fuels.

S. F. Birch and R. Stansfield. The Effect of Sulfur Compounds upon Lead Response.

Gerald M. Rassweiler and Lloyd Withrow. High-Speed Motion Pictures of Gasoline Engine Flames.

G. D. Boerlage and J. J. Broeze. Combustion Qualities of Diesel Fuel.

A. Ludlow Clayden. Propane, the Perfect Fuel.

M. M. Holm. Corrosion Test Methods in Use of Liquid Butane as Motor Fuel.

E. M. Barber and A. V. Ritchie. A Variable Vapor Volume Barometric Type of Vapor Pressure Apparatus.

Division of Petroleum Chemistry

F. W. Hall, Chairman
C. R. Wagner, Secretary
Frank Smith, Local Assistant

Wednesday Morning and Afternoon

V. N. Ipatieff and Herman Pines. Polymerization of Propylene under High Pressure and Temperature in the Presence and Absence of Phosphoric Acid.

V. N. Ipatieff and B. B. Corson. Gasoline from Ethylene by Catalytic Polymerization.

T. A. Mangelsdorf, B. L. Sowers, and A. J. Deutser. The Measurement of Flow Rates of Hot Oil Streams by Dilution Method. Study of Naphthenic Acid for Use as Diluent.

Johannes H. Bruun. Laboratory Bubble-Cap Columns of Glass.

Mildred M. Hicks-Bruun and Johannes H. Bruun. The Freezing Point and Boiling Point of Propane.

Ralph W. Dornte and C. Vaughan Ferguson. Oil Oxidation. I. The Reaction Which Is Unaffected by the Products.

W. B. Kay. The Density of Hydrocarbon Gases and Vapors at High Temperature and Pressure.

F. J. Smith and H. B. Sharp. Parallel Scale Rule for Vapor Pressure Data.

Harry T. Rall and Harold M. Smith. Physical Properties of Hydrocarbon Oils. I. Behavior in Dilute Solutions of Organic Solvents. Benzene.

Harry T. Rall and Harold M. Smith. Physical Properties of Hydrocarbon Oils. II. Relations between Molecular Weight and Concentration in Dilute Solution.

Bert H. Lincoln, Gorden D. Byrkit, and Waldo L. Steiner. Chlorine Compounds in Lubricants. Chemical Constitution and Timken Film Strength.

H. G. Nevitt and L. C. Krchma. Viscosity-Temperature Susceptibility as an Index of the Effect of Temperature on the Consistency of Asphalt.

C. J. Boner. Factors Which Influence the Selection of Metallic Soaps for Thickening of Mineral Oils.

M. B. Penn and F. T. Gardner. Chlorinated Paraffin. II. Products of Dechlorination.

E. R. Kenner Dies

By Teletype

NEW YORK, March 24.—E. R. Kenner, manager of the tire and accessory department of the Shell Petroleum Corp., St Louis, Mo., died March 23, according to word received by the Shell Eastern Petroleum Products Co., here today. The cause of Mr. Kenner's death was not known here.

Let Contract for Natural Gas Line into Detroit

NEW YORK, March 19.—Contracts authorizing the construction of an 800-mile natural gas pipe line into Detroit have been signed and bids for part of the work have already been received, it is understood. The companies involved in the contract are the Panhandle Eastern Pipe Line Co., Columbia Gas and Electric Co. and Columbia Oil and Gasoline Co.

The line will be built by the Michigan Gas Transmission Co., which was formed by the Columbia Gas and Electric Co. It will run from the Indiana state connection of the Panhandle Eastern into Detroit and will involve an outlay of about $16,000,000, it is reported, with about $8,000,000 to go into actual construction of the gas line.

To Build Stabilization Plant

The Continental Oil Co. let a contract to Petroleum Engineering, Inc., Tulsa, associated with Arthur G. McKee & Co., covering erection of gasoline recovery and crude oil stabilization plant on its Tepetate holdings near Eunice, La. The plant is to process 50,000,000 cubic feet of gas daily at a pressure of 300 to 500 pounds and to stabilize the high gravity crude to 42 gravity for shipment to the Continental refineries. It is reported that the expenditure involved is approximately $200,000.

"Lubricate for Safety" Program Endorsed by Oil Companies

NEW YORK, March 23

PLANS for a "Lubricate For Safety Week" drew a step nearer completion here today when 35 sales executives and advertising agents representing 14 large oil companies met in response to an invitation of the American Petroleum Institute. The week will start May 23 and end May 30.

As a result of today's meeting the machinery was set in motion which will place in the hands of oil companies, through publicity releases and through the trade press, some suggestions on how to best go about co-operating in this effort of educating the car owner to "Lubricate for Safety".

The publicity releases will be sent out through the institute. While the institute has not officially endorsed the program, it has indicated its approval by its willingness to co-operate in this way. The material to be sent out will include suggestions for copy to be used in radio announcements; an outline of the purpose of the campaign with some suggestions as to how to take part in it; a copy of an API manual on safe driving, which it is hoped oil companies will use either in whole or in part in connection with their promotional literature, and a sample of the emblem that has been approved by the oil industry committee. For the present it is planned to distribute the emblems, as stickers and as proofs suitable for reproduction, through the oil industry's trade publications.

With the emblem as the common bond, the group today was in agreement on the point that each oil company should handle its safety lubrication promotion in its own way. A word of caution was inserted into the meeting by W. R. Boyd, Jr., the institute's executive vice-president, who said that the safety appeal should be treated with care and not be over-played to the point of attracting unfavorable attention from automotive circles or from regulative-minded members of state legislatures.

At this point it was decided that the emphasis of the "Lubricate for Safety" program should be placed upon the chassis lubrication job every 1000 miles rather than on the oil change, due to the greatly varied and inconsistent engine oil change requirements recommended by the car manufacturers. It was felt that "with the chassis lubrication as a springboard" the job of selling an oil change could be done without tieing it in to the safety theme too strongly.

The subject of inspecting cars from a safety standpoint was shunned by the group, who felt that such a service was out of the service station class and that it involved a legal responsibility the oil company was not called upon to assume.

The period from May 23 to 30 is to be regarded merely as an inaugural period. The plan is expected to continue, with the idea of getting the motorist in the habit of having his car regularly and frequently lubricated for the sake of his safety.

It is recommended that oil companies make immediate and widespread use of the accepted slogan "Lubricate for Safety", and that they promote, in their own interests, the "National Lubricate for Safety Week". It is further recommended that this be done through a complete merchandising tie-up including national and local advertising media, billboards, window displays, posters, A-signs, literature, and even the pasting of the emblem on all letters and statements that the oil companies send out.

Indications at the meeting today were that the larger companies would make every effort to include the emblem and the slogan in their spring advertising plans. While the meeting did not develop any complete list of copy ideas for advertising, the following few are offered for possible use:

"(1) Mechanical failures caused by lack of lubrication lead to accidents.

"(2) Driver fatigue resulting from improper functioning of working parts due to lack of lubrication lead to accidents.

"(3) Regular lubrication prevents costly mechanical repairs.

"(4) Safety of the financial investment in the car, as well as human life is assured by maintaining vehicles in safe-operating condition through periodic lubrication and inspection.

"(5) Servicing stations fully equipped for lubrication, inspection, and minor repairs are 'safety stations'.

"(6) Dry bearings, and other working parts, are contributory causes of accidents.

"(7) The motor vehicle cannot take care of itself.

"(8) 'Take care of your car and your car will take care of you,' and other slogans, will serve as reminders to car owners.

"(9) Lubrication has become a specialized undertaking requiring the services of trained men and the proper use of many different kinds of lubricants.

"(10) The cost of regular lubrication is only a small investment for insurance against excessive wear and possible accidents."

An advertising committee to work out specific plans for companies to follow in their promotion activities was appointed by F. E. Whitesell, Socony-Vacuum Oil Co., who was chairman of the morning session. This com-

Daily Average Production, Important Districts, American Petroleum Institute Figures

	Week Ended Mar. 21 Barrels	Mar. 14 Barrels
Okla. City	127,000	120,800
Total Okla.	525,900	514,750
East Texas	441,050	439,800
Total Texas	1,113,950	1,106,100
Rodessa	43,900	36,300
Total Louisiana	201,550	192,750
California	565,900	566,600
East of Rockies	2,270,050	2,241,750
Total U. S.	2,835,950	2,808,350
Crude Imports	60,140	95,000
Total New Supply	2,896,090	2,903,350

mittee met this afternoon with the previously appointed oil industry committee. The advertising committee includes Eben Griffiths, Socony-Vacuum; S. M. Morey, Sinclair; Raymond Browne, The Texas Co., B. N. Pollak, Richfield; G. E. Hughes, Shell Eastern; O. R. Waller, *Lubrication & Maintenance;* and John W. Thompson, NATIONAL PETROLEUM NEWS.

Iowa Judge Rules Defective Passage Invalidates State Gas Tax Law

DES MOINES, March 23

IOWA'S gasoline tax law was held unconstitutional in a decision late last week by a district judge at Sioux City. The case was one in which the state sought to collect the tax on motor fuel consumed by Woodbury county.

The oil industry is not affected by the judge's decision as yet but the case might be used as a basis for a test of the law by the industry. Procedure would be to stop payment of the 3 cent tax, and to seek an order restraining the state from enforcing the law.

The decision of District Judge F. H. Rice at Sioux City, March 20 was based on the method of passage of the current gasoline tax law by the legislature. The judge held that the entire amended law should have been put to a separate vote in the house. Instead, the house concurred in the senate's amendments, thereby erring.

Quick action from the Iowa Supreme court is anticipated, however, for a final decision on the legality of the law. The count on the law is one and one. Constitutionality of the act was upheld in a recent case from Story (Nevada) county district court. Both cases involved the right of the state to collect the tax on motor fuel consumed by a county.

The supreme court last week upheld one section of the law, holding that cities are not exempt from payment of the tax.

Meanwhile, the legal branch of the oil industry is studying the Sioux City decision to determine the position of the industry under the law. The peculiarity is that the decision goes back to the passage of the law, and ordinarily district courts seldom go beyond the certification of a law. Non-passage by the house, as held in the Sioux City decision, is a serious defect in the view of attorneys.

Iowa's current gasoline tax law was enacted in 1934. Previously the state operated under the original 2-cent tax law, plus the increase of 1 cent July 4, 1927 and various amendments. This law was upheld in a decision by a federal court.

The 1934 enactment in effect was an entirely new tax law, the major changes being in more rigid reporting and collection of taxes. Rebates to counties and cities were eliminated with passage of the law in 1934. Only tax rebates are to the state and to farmers.

The non-rebating to counties brought on the suit at Sioux City, resulting in last week's decision. State Treasurer Leo J. Wegman was attempting to collect $4200 from Woodbury county as tax on motor fuel consumed in the county's road maintenance and truck equipment.

Atlantic Loses in First Labor Board Decision

WASHINGTON, March 23.—In its first oil decision, the National Labor Relations Board has ordered the Atlantic Refining Co. to "cease and desist from refusing to bargain collectively" with local chapters of the oil workers' union as the "exclusive representatives" of workers (other than supervisory and clerical employes) at its plant at Brunswick, Georgia.

The board charged that the plant manager declined to discuss with the union representatives an agreement relating to wages, hours, and working conditions. The company answered that at all times it had conferred with the Locals, the Employes Representation Plan and individual employes "on matters of alleged grievances and complaints and that such grievances have been happily adjusted."

Such conferences, no matter how happily the grievances may be adjusted, do not constitute "collective bargaining" under the Wagner Labor Law, the board ruled.

"Collective bargaining," according to the NLRB, "means more than a discussion of individual problems and grievances with employes or groups of employes. It means that the employer is obligated to negotiate in good faith with his employes as a group, through their representatives on matters of wages, hours and basic working conditions and an endeavor to reach an agreement for a fixed period of time."

The company denied that its production of petroleum products is a part of interstate commerce. But the board overruled this, upholding findings of Trial Examiner John A. Lapp. Attention was called to Atlantic's refining, production, pipeline and marketing operations in other states. The Brunswick plant receives interstate raw materials and ships its processed products of gasoline, oils and asphalt to eight states, it was said. The company also denied that employes at its Brunswick plant had designated Locals 310 and 318 of the oil workers' union as a unit for exclusive "collective bargaining".

Correction

In an editorial on page 14, March 18 issue of NATIONAL PETROLEUM NEWS, Wirt Franklin was identified as president of the Independent Petroleum Association of America. The word "former" was inadvertently left out. Mr. Franklin held that position from the time the association was organized until last November when he asked that he be relieved of the heavy responsibilities he had carried since 1929. Charles F. Roeser, independent producer, Fort Worth, is president of the association.

Waverly Oil Works Co.'s Pittsburgh plant destroyed by fire, while water prevented fighting the flames

International News Photo

Floods Damage Refining and Distributing Properties, Reduce Consumption

CLEVELAND, March 24 WESTERN Pennsylvania's worst floods in 30 years made no exception of the oil industry in their merciless spread of ruin. Today, nearly a week after the Allegheny and Ohio rivers started on the rampage which completely isolated Pittsburgh from the outside world, three refineries are idle, a fourth is practically in ruins from fire, and Gulf Refining Co.'s 37-story modern office building in Pittsburgh is deserted.

Oil companies as yet have made no attempt to estimate the damage to distributing properties and it is in this division that losses probably will be the heaviest.

Fire broke out at the Waverly Oil Works Co.'s plant, five miles north along the Allegheny river from downtown Pittsburgh, on the morning of March 18, and two days later the flames were still leaping 40 and 50 feet in the air. Hydrants were 10 and 12 feet under water and firemen were almost helpless in their efforts to bring the flames under control.

Origin of the fire at the Waverly plant is not known, but it is believed to have been started by electric spark as some power connection broke. Tankage, several warehouses and the grease plant were destroyed. A distillation unit, the newest equipment at the plant, is still standing. Muck and dirt caused by the high water as well as the fire is so deep around the plant that it will be several days before a thorough check of the loss can be made, company officials said today.

The Waverly plant was covered by insurance and plans for rebuilding are already under way. A deal has been made with fellow refiners so that there will be no more than a temporary suspension of deliveries to Waverly's regular outlets pending resumption of refinery operations.

Water was 10 to 12 feet high around Freedom Oil Co.'s plant at Freedom, and Canfield Oil Co's plant at Coraopolis at the height of the flood. Gulf Refining Co.'s 8000-barrel plant on Neville Island in the Ohio river was under 10 feet of water, according to reports.

Canfield took all precautions to cope with an ordinary flood by disconnecting intake valves of all of the larger storage tanks. The flood exceeded all expectations, however, and some of the larger tanks broke from their moorings. Some oil was lost from tanks which had not been disconnected but it was comparatively little. The company's entire stock of Pennsylvania motor oil, probably the most valuable of its inventory, was unhurt. There was very little damage to equipment and the biggest task will be in clearing away the debris and cleaning the silt from equipment.

Canfield expects to resume refining operations by the end of this week. Package shipments will be resumed March 25 and it is likely, company officials said, that tank car shipments

can be resumed March 26 or 27. During the suspension of activities at Coraopolis, outlets usually supplied from that point were taken care of from the company's warehouses at Cleveland and Jersey City. There was practically no delay in making deliveries, it was said.

Freedom probably will not resume operations at its plant before the end of next week. A complete check of the Freedom loss has not been made as yet.

Penn-Glenn Oil Works, a grease and compounding plant at Leechburg and affiliated with Pennsylvania Refining Co., was completely wiped out, company officials said.

Pennsylvania Oil Products Refining Co.'s refinery at Eldred was down most of last week, on account of high water. The plant will be running again in a few days. According to reports, this is the only plant in the upper field where refinery operations were hampered by high water.

Rail and truck shipments from many upper-field refineries were delayed by floods. Shipment from Oil City via the Pennsylvania railroad were held up one day, and shipments were delayed slightly from other points as bridges were washed out. Motor traffic in some sections was at a complete standstill for two and three days.

Lack of power still hampers activities of oil companies with offices in Pittsburgh. It takes electricity to run a passenger elevator, and few people relish climbing 37 flights of stairs twice a day, which is what Gulf employes would be up against. Not all buildings are without power now, however. Some companies have established temporary headquarters in hotels where power is available.

Committee Doesn't Want Pollution Authority

WASHINGTON, March 23.—Contrary to expectations, the National Resources Committee, headed by Secretary Ickes, has no desire to become just another administrative agency. It wants only to do the planning for the New Deal.

That was the view expressed March 23 to the Senate Commerce Committee by Abel Wolman, chairman of the water resources subcommittee of the National Resources Committee. Mr. Wolman's opposition was somewhat of a surprise because one of the Lonergan water pollution bills (S 3958) proposes to make permanent the National Resources Committee and would give it authority to set up federal sanitary water districts and take steps to prevent water pollution.

While Wolman had nothing to say against the provision making the Ickes' committee permanent, he attacked other sections of the bill as impracticable and unenforcible.

Wolman's testimony gave rise to reports of an interdepartmental row between federal agencies now dealing with pollution problems and the Ickes' committee. It was particularly unexpected because, many believed, the Lonergan Bill had the earmarks of a departmental bill.

In some quarters, the Lonergan Bill had been regarded as an indirect approach at making permanent the National Resources Committee and as in line with plans for placing under Secretary Ickes control of all conservation activities. If so, the scheme has apparently misfired.

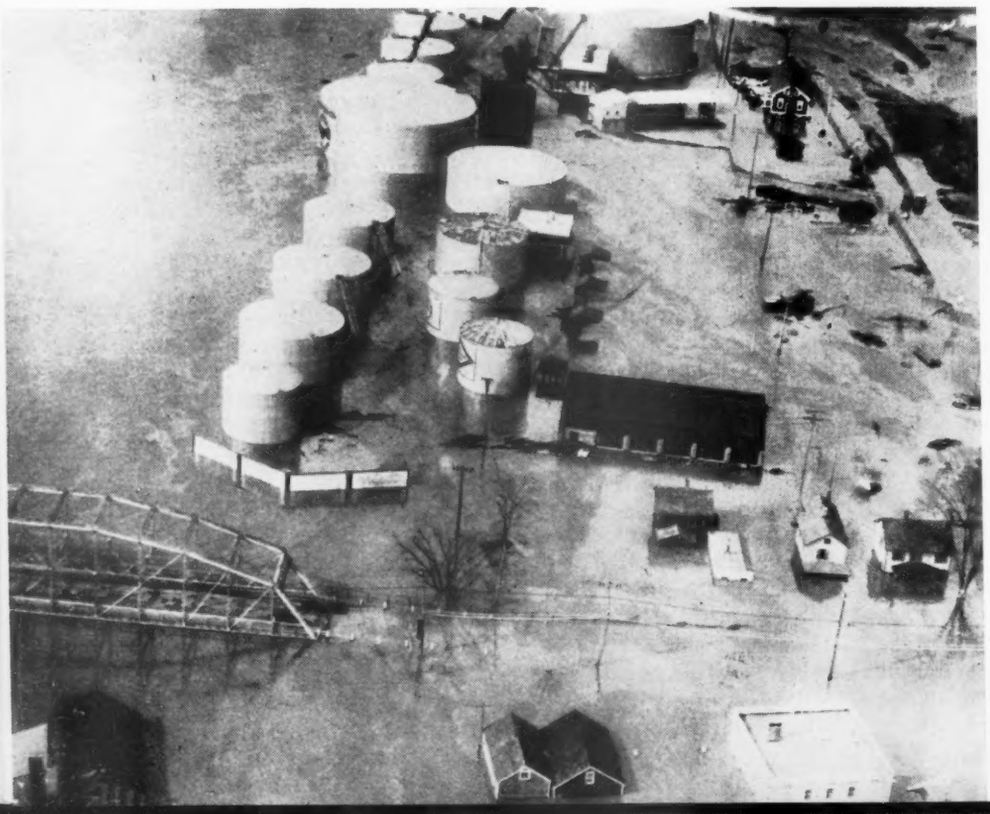
Mr. Wolman favors further investigation of methods of dealing with water-pollution. He considers the Lonergan Bill impracticable because it seeks to apply one formula to all kinds of pollution. He favors giving the states a chance to handle the problem through interstate compacts.

Representatives of the Mid-Continent Oil and Gas Association and the Independent Petroleum Association are scheduled to testify later this week. Other industries, including paper pulp, mining and coal, are opposing the Lonergan Bill on grounds that existing federal laws, together with state laws, are sufficient. However, they are not adverse to increased appropriations to study the problem.

According to Wolman, requiring all industrial plants concerned to build waste-treatment plants would cost between $3,500,000,000 and $5,000,000,000.

The Connecticut river has inundated this bulk plant as it has many others in New England. One tank already had been floated away from its foundations when view was taken

International News Photo



Bidding for New Crude Connections Less Spirited in Mid-Continent

TULSA, March 21

THERE is a lull in the new-connections campaign recently waged with some vigor in certain areas. Now wells are given pipeline outlet as rapidly as they are completed but the trading around that prevailed for a few weeks has subsided.

Correction of the large gasoline inventories will have to occur before the bidding for crude again becomes spirited, but purchasers expect to see active solicitation for connections resumed within three or four weeks. Temporarily, everybody seems to be satisfied.

The crude market is healthy and firm, but the predictions of another advance have died to a faint whisper. About the middle of May, granted that all goes well and no new fields of large proportions are found, prophesying of an advance will be loud and insistent.

In East Texas, where the switching of connections was most pronounced, the desire to put more wells on the line has not diminished but fewer changes are being made than six or seven weeks ago. New pipelines into the Rodessa field also are reported as short of maximum quantities of oil they are capable of handling.

The East Texas situation was unlike that which existed elsewhere in that independent gathering systems were the most active bidders for connections and they effected numerous changes by paying what were politely known as gathering charges. This form of premium ranged up to 7.5 cents per barrel and, in a few instances, 10-cent premiums were reported. The producer who chose to break connections with major pipelines and take the bonus usually was called upon to lay a short stretch of line, sometimes so little that it was amortized within a few hours.

It was about November 1 that the search for new connections hit its full stride. The raise in price January 9 checked it somewhat, but numerous wells had by that time been transferred to lines paying bonuses.

In the period between Nov. 1 and March 15, last, 11 of the independent lines gained 681 wells. The total completions of new wells in this period was 789. Only one or two of the major pipelines had a net loss in connections, but the gains made by the major group were not in proportion to completions.

Predicts April Gasoline Demand 9 Per Cent Above Normal

WASHINGTON, March 23

MOTOR fuel demand will continue its record-breaking pace during April, according to the U. S. Bureau of Mines, which has forecast a domestic demand totaling 38,680,000 barrels for that month. This is about 9 per cent above "normal" for April, it was said.

Daily average production of crude oil for April, to meet the contemplated demand, was estimated at 2,797,300 barrels, or about 11 per cent above the allowable for April under the oil code last year.

Besides this, the bureau forecast gasoline exports totaling 2,800,000 barrels and crude exports, 3,900,000 barrels, during April.

The bureau recommended a withdrawal of 1,780,000 barrels from gasoline stocks during April. This compares with a recommended increase of 1,780,000 barrels for March.

"Unfavorable weather of recent weeks and the tendency of refiners to increase crude runs in order to meet a heavy demand for heating oils have caused a rapid increase in gasoline inventories," according to the report.

Inventories of finished and unfinished gasoline on Jan. 31 were 62,613,000 barrels, the report added. According to the American Petroleum Institute, such stocks increased about 7,700,000 barrels in February. An additional 3,000,000 barrels will probably be added in March, hence stocks as of March 31 may amount to as much as 74,000,000 barrels," the Bureau said.

"This total is from five to ten million barrels above the various estimates of requirements; hence, in order to meet the minimum requirements as of Oct. 31, it follows that the contemplated withdrawal for April, generally the first month in which stocks are drawn on, is greater than usually recommended for that month," the report said.

The Bureau's estimate of "direct" sales of natural gasoline and benzol was reduced from 900,000 barrels in March to 840,000 barrels in April; a reflection of the seasonal decline in sales of stabilized natural as motor fuel, the report said.

Addition of exports and the deduction of stock decreases and "direct" sales, gives 38,860,000 barrels as the required production of finished and unfinished gasoline in April, 1936, distributed among the refining districts, as follows:

East Coast	6,410,000
Appalachian	1,500,000
Indiana-Illinois	6,220,000
Oklahoma	2,580,000
Kansas-Missouri	2,400,000
Texas Inland	2,930,000
Texas Gulf	8,180,000
Louisiana Gulf	1,320,000
Arkansas-Louisiana Inland	790,000
Rocky Mountain	880,000
California	5,650,000

The percentage of natural gasoline to be used in the production of gasoline was estimated at 6 per cent which, applied to the contemplated output, is equivalent to 2,330,000 barrels, leaving 36,530,000 barrels of

straight-run and cracked gasoline to be made from crude. Percentage yield of gasoline was estimated at 44.40 per cent for April, which indicates that 82,270,000 barrels of crude will be run to stills.

Crude imports during April were estimated at 2,800,000 barrels, compared with a forecast of 2,900,000 barrels in March.

Provision was made in the bureau's calculations for the withdrawal of 55,000 barrels daily from crude oil stocks, an increase of 30,000 barrels over the recommendation for March. The estimated required production of crude, averaging 2,797,000 barrels daily during April, was distributed among the states, wth comparative figures for March, as follows:

State	Barrels per Day March	April
Texas	1,104,000	1,122,800
California	538,800	552,600
Oklahoma	506,300	525,000
Louisiana	151,400	160,900
Kansas	142,000	146,000
New Mexico	64,200	63,200
Pennsylvania	44,800	44,800
Michigan	44,300	41,000
Wyoming	34,800	34,800
Arkansas	31,900	30,500
Kentucky	14,500	14,400
Montana	12,400	12,300
New York	10,800	11,100
Illinois	11,600	11,000
Ohio	10,800	10,800
West Virginia	10,400	10,000
Colorado	3,700	4,100
Indiana	2,200	2,000
	2,738,900	2,797,300

With regard to the above California figures, the bureau stated that its recommendations were calculated as the requirements for these months only and are not intended as the daily average demand for the current year.

Increase Clay Treating

MONTREAL — McColl-Frontenac Oil Co. Ltd., has arranged with the Gray Process Corporation for an increase in its licensed clay treating capacity. The process is used in the company's Toronto and Montreal refineries.

National Interim Equipment Policy Suggested by Code Committee

By E. L. Barringer
N. P. N. Staff Writer

CHICAGO, March 23 — A NATIONAL interim equipment policy, to prevent recurrence of the "equipment evil" in marketing, pending approval or rejection of the proposed code to be presented shortly to the Federal Trade Commission will be recommended to the industry this week by the committee of three appointed at the recent Chicago code conference.

Recommendations embody the principles of Rule 5, the equipment rule, in the proposed code, and in addition that vendors maintain a position of neutrality in transactions between gasoline pump manufacturers and dealers.

The recommendation, if adopted, will in effect place the equipment rule of the proposed code in force immediately. Copies of the recommendation are to be issued this week to marketers.

The recommendation is signed by C. E. Arnott, vice-president, Socony-Vacuum Oil Co., New York; Paul E. Hadlick, secretary, National Oil Marketers Association, Washington; and Wilmer R. Schuh, president, National Association of Petroleum Retailers, Milwaukee. The three comprise a committee appointed at the Chicago code conference Feb. 27 to seek the industry's support for making the proposed midwestern code national in scope.

The only direct reference in the recommendation to an "equipment evil" is on the point of relations between gasoline pump manufacturers and dealers.

A number of companies have been approached, the recommendation relates, to become a party to a deal whereby the petroleum vendor would withhold a stipulated amount from the dealer's margin and make remittance each month to the pump company for equipment purchased by the dealer.

"This practice, of course, if embarked upon by the marketing division of the petroleum industry," the recommendation explains, "would shortly end up in the equipment being furnished by the oil companies and all of the preceding suggested rules and the equipment rules of the proposed code would be of no avail."

In explaining the committee's action the recommendation contains the following statement:

"Your committee feels that while there is no legal obligation at all in following this recommendation nevertheless any deviation therefrom will of itself make the proposed code less effective and therefore, if the industry wishes a code under the Federal Trade Commission to be effective your committee feels that the industry should in the interim period govern itself accordingly."

Following is the full text of the interim equipment recommendation:

"1. Vendor will not construct, lease, lend, furnish, install or re-locate pumps, tanks, driveways, buildings, canopies, air compressors, lubricating oil storage or dispensing equipment, grease lifts or pits, grease equipment, grease guns, air towers, light poles, flood lights, material for driveways, buildings or canopies, or any other equipment of any character whatsoever used or usable in connection with the storage, display, sale or consumption of petroleum products (excepting only pump globes and the usual advertising signs) for or to anyone engaged in the sale or delivery of petroleum products to consumers, or for or to consumers.

"2. Vendor will not sell any of the things mentioned in paragraph 1, above, except that upon expiration of all contractual relationship for the sale of petroleum products stored in or dispensed through equipment furnished or leased by us and on request of the buyer, any such equipment

theretofore furnished or leased to the buyer must be sold in its entirety to the buyer; or, if the buyer does not request that the equipment be sold, then, on the request of anyone about to sell to the buyer petroleum products to be stored in or dispensed through equipment of such type, the equipment in its entirety shall be sold to such new supplier.

"3. It will be permissible to furnish and install any of the equipment above mentioned on land either:

"(a) owned in fee by vendor, or

"(b) held by vendor under a valid and binding lease; provided that at the time the lease was executed the premises were not improved with any building or other facility or equipment for the sale or storage of petroleum products; or

"(c) held by vendor under a valid and binding lease creating a tenancy of at least five years' duration, which lease provides for a substantial rental not determined by the volume of petroleum products sold at the premises and which lease does not contain any provision permitting either party thereto, in the absence of breach of obligation by the other party, to cancel or terminate it or the term thereby granted before the expiration of five years from the beginning of such term. (These leases should be made only on new stations not previously selling petroleum products.)

"4. Vendor will not lend, lease or otherwise furnish any equipment of any character whatsoever except trademark pump globes and other usual advertising signs to anyone purchasing or receiving petroleum products by pipe line, cargo, barge, tank car, or truck train.

"5. Vendor will not pay rentals or otherwise pay for the privilege of displaying advertising on premises where petroleum products are sold.

"6. Vendor will not make any repairs to any equipment of any kind not owned by him.

"7. Vendor will repair equipment owned by him and furnished or leased to or installed with retailers or consumers to the extent necessary to maintain the equipment, its attachments and appurtenances, in a safe and satisfactory working condition, provided such repairs can be made without the removal of the equipment from the premises where installed, but shall not make any changes in such equipment such as the conversion of a hand or air operated piston type pump or visible type pump into an electric meter pump.

"8. Underground tanks furnished or leased to retailers or consumers may be replaced with other tanks of the same size or removed from the premises for repair.

"9. The pump industry is maintaining a complete selling and servicing organization and it is prepared to give reasonable credit terms to dealers. A number of companies have been approached and asked to be a party to a contract whereby certain amounts of the dealer discounts would be deducted at the time the vendor made deliveries and payments made by the vendor to the pump company monthly. This practice, of course, if embarked upon by the marketing division of the petroleum industry, would shortly end up in the equipment being furnished by the oil companies and all of the preceding suggested rules and the equipment rules of the proposed code would be of no avail.

"Therefore, your committee recommends that in the interim period the transactions should be strictly between the pump company and the dealer, and the petroleum vendor should not in any way become a party to the transaction. We believe it well too, to suggest that the petroleum vendors maintain a position of neutrality in this matter during the interim period."

Arkansas Companies to Fight Gas Tax Suit of Traveling Tax Lawyers

LITTLE ROCK, Ark., March 21

LARGER oil companies marketing in Arkansas plan to oppose, rather than compromise, any legal action that may be taken by the governor to force them to pay some $600,000 alleged due the state because of the 1 per cent evaporation loss deduction which has been made by all companies when paying the state gasoline tax.

This decision was reached March 20 when attorneys for the larger marketing companies met at Dallas and discussed all phases of the threatened action which, it is reported, originally was instigated by a traveling troupe of lawyers who are said to have attempted to stir up the same type of trouble for oil companies in other states.

The matter hinges on the interpretation of the Arkansas gasoline tax law as given by the commissioner in charge of the gasoline tax collections. The law permits deduction of the actual evaporation up to 1 per cent. The commissioner ruled long ago that a 1 per cent deduction for evaporation loss would be allowed, and the oil companies habitually have made that deduction in calculating the amount of gasoline sold in the state each month and the amount of taxes due the state.

This traveling troupe of lawyers, however, apparently have "sold" Arkansas' governor on the idea that the oil companies have been making a deduction based on an erroneous interpretation of the law by the gasoline tax commissioner. These lawyers have pointed out that the Arkansas law does not specify that the volume of gasoline should be figured on a temperature correction to 60° F., a practice that is virtually universal in the oil industry. These same lawyers have argued to the governor apparently that whereas the temperature correction is made to 60° F., actually the mean temperature in Arkansas is slightly higher, resulting in an increase in the gasoline volume actually sold within the state.

Somewhere along the line it has been figured that the oil companies really were entitled to claim only 0.25 per cent instead of 1 per cent evaporation loss, and therefore since 1930 the taxes on this 0.75 per cent have accumulated to a total of $600,000.

The lawyers and their accountants apparently convinced the governor that there was quite a sum of money which could be forced from the oil companies, not mentioning incidentally the fact that these same lawyers, along with a Jonesboro, Ark., lawyer who apparently was brought into the picture for local color by the visiting lawyers, were to get a percentage of whatever they could squeeze from the oil marketers in the state.

Demands for alleged back taxes have been made not only on the major companies but also on the small, independent operators. The largest single

claim is reported to be approximately $138,000.

Representatives of the larger companies attempted to present their case to the governor but he decided to let the matter be tested in the courts. And while no legal action has been filed as yet, the Jonesboro lawyer late in the week was reported to have served notice on some of the companies that he would file suits within the next few days.

The oil companies decided to oppose such action in the courts in order to get a thorough test of the whole matter. It was pointed out by the representative of one of the large operators that if his company had been paying the tax in good faith on an interpretation from the commissioner which actually was erroneous, his company wanted to get the proper interpretation and get the whole thing ironed out rather than compromise now and perhaps find itself in a similar situation at a later date, with no more legal rulings on which to be guided than they now have.

The traveling troupe of lawyers is reported to be originally from New Orleans, and to have attempted the same or similar tax ferreting practices in California, Wyoming and Indiana.

* * *

California Effort Looks Hopeless

LOS ANGELES, March 21.—Strenuous efforts on the part of a group of high pressure attorneys to collect some ten million dollars said to be due the state of California from oil marketing companies for delinquent gasoline taxes and alleged erroneous deductions for evaporation losses, have not been successful and indications were that representatives of the clique had moved on to try the so-called racket elsewhere.

Developments on the Pacific Coast to date center around a contract made May 18, 1935, between the California state director of finance and an attorney, understood to have formerly handled tax collections for the late Senator Huey Long in Louisiana. This deal provided for a 25 per cent commission to the collector on all monies collected up to $2,000,000 and 20 per cent commission on all above that sum. A later amendment on August 26, included assigned interests of four other attorneys and extended the time within which demands could be made on oil companies to Nov. 26. These demands were made and a statement filed with the director of finance within the prescribed date.

ON Dec. 31, the state board of equalization, which is responsible for tax collections but not a party to the contract, issued a statement claiming that allegations of the lawyers were unsupported by fact. The board admitted that when large quantities of gasoline were sold temperature allowances were made in accordance with long standing trade practices but asserted:

"This temperature adjustment has never operated to reduce gasoline tax liability to the state. Practically all taxable sales are made without any temperature correction because deliveries are by tank trucks directly from local storage depots. In other cases temperature corrections do not operate so as to deprive the state of any revenue to which it is legitimately entitled and any assertion that oil companies have defrauded the state through such adjustments is absurd and untrue."

This stand was further justified in a written opinion handed down by State Attorney General Webb to R. L. Riley, state controller, in which it was held that the legislature was without power to pass the act under which the contract was made and that Riley was justified in his refusal to pay any claims the collectors might make for compensation under terms of the contract.

The collector group countered on March 13, with a statement referring to a decision of the chancery court of Adams county, Mississippi, rendered Feb. 17, which barred the practice of allowing temperature corrections in gasoline tax payments.

William M. Bayne, former state assemblyman and now holder of an assigned contract interest, stated that contract terms had been fulfilled but that lawyer contractors had been acting in co-operation with the state director of finance and had delayed court action because negotiations with oil companies were continuing. This interested party claimed the Mississippi and California situations were identical. He expected negotiations with the oil companies to be satisfactorily settled but indicated legal action would result if the dickering failed.

General attitude of marketing companies here is that the claims held no merit and were a dead issue.

U. S. Crude Stocks Rise 15,000 Barrels

WASHINGTON, March 21.—Crude stocks totaled 310,120,000 barrels on March 14, an increase of 15,000 barrels from the previous week, according to a report today by the U. S. Bureau of Mines. Domestic oils increased 5000 barrels but foreign crude showed a decrease of 40,000 barrels.

Grade of Crude oil	March 7	March 14	Change from March 7
	(Thousands of Barrels)		
Penn. grade	4,049	4,119	+ 70
Other Appal.	900	887	— 13
Lima-N. E. Ind.-Mich.	1,112	1,170	+ 58
Ill.-S. W. Ind.	10,571	10,497	— 74
N. L. and Ark.	9,401	9,608	+207
W. Texas and S.E. N.M.	28,611	28,694	+ 83
East Texas	20,381	20,430	+ 49
Other Mid-Cont.	127,203	127,209	+ 6
Gulf Coast	25,829	25,783	— 46
Rocky Mountain	26,570	26,575	+ 5
California	35,854	35,514	—340
Foreign	3,174	3,134	— 40
Total reported	293,655	293,620	— 35
Estimate of unreported	16,450	16,500	+ 50
Total stocks	310,105	310,120	+ 15

Boye Re-elected

NEW YORK, March 20.—B. L. Boye, Socony-Vacuum Oil Co., was re-elected president of the Asphalt Institute at a meeting here this week. Other officers elected included J. A. Blood, Standard Oil Co. of California, vice-president; Leroy M. Law, Shell Petroleum Corp., vice-president; T. M. Martin, Lion Oil Refining Co., vice-president; A. M. Maxwell, Standard Oil Co. of Ohio, vice-president; C. W. Bayliss, Barber Asphalt Co., chairman of the executive committee; Herbert Spencer, Standard Oil Co. of New Jersey, treasurer; and J. J. Gartland, The Texas Co., secretary.

Building Personnel Greatest Problem In Marketing Jobbers Told

By F. P. Bruce
N. P. N. Staff Writer

INDIANAPOLIS, March 19

SALESMANSHIP, merchandising methods, and the proposed marketing code were the principal subjects discussed at the business session of the Indiana Independent Petroleum Association's annual spring convention and refiners' and suppliers' exhibit held here the past two days. In discussing selling problems, speakers agreed that selection and training of personnel were of primary importance, although they did not agree as to methods.

Merchandising at the island is getting better than average returns from average men, E. J. Gallmeyer, The Wayne Co., Fort Wayne, told the group. The opportunity to sell starts at the island, and you must see that your men are prepared to take advantage of that opportunity, he said.

"Teach your men to be courteous, gracious, useful, and show a willingness to serve the customer," he urged. "See that you are interpreted through your men so that the customer will want to come back."

By showing a desire to really serve the customer and knowing their wares, your men can gain the attention of the customer. It is then not so hard to arouse customer interest in your products.

Mr. Gallmeyer suggested that more thought be expended on displaying products in order to attract customer interest.

"Perhaps it is the bootlegger phobia in us that makes us hide our wares inside the station or even in the basement. Goods well displayed are half sold," he said. "Give the salesman a boost by displaying the goods you want him to sell—the customer will see and buy."

Personnel and promotion are the two greatest things in salesmanship, Colonel T. Russ Hill, nationally-known sales authority and columnist, Toledo, believes. Personnel is the scarcest commodity in the country today and there are too many doing promotion work with "bum" ideas, he said.

"New products are coming out every day in big volume and there is a market for these articles, but there is no one to hook the products up with the market," Colonel Hill asserted. "Experienced salesmen know too many reasons why things can't be done so you must get people who will go out and talk your products."

Colonel Hill believes that everyone directing sales should get out on the front line and see what is doing. A sales manager cannot accomplish a good job sitting at his desk, he said.

Colonel Hill sees in the next six years the greatest sales cycle in the history of the country. Everyone who is interested in selling should prepare themselves to take advantage of the opportunity which lies ahead, he said.

GET records of your business and use them, L. L. Shoemaker, Head of the Merchants Service Division, The National Cash Register Co., Dayton, said in discussing "Stepping Up Profits in 1936."

"There is an upward trend in prices, volume, and costs, but profit trends are downward," he said. "Proper control of operations will be very necessary to make a profit in the next few years. Besides the proper control of operations, there are five other things that the oil man can do to make a profit. They are: advertise, modernize, display, sell, and supervise."

Mr. Shoemaker made an analysis of the reasons why customers are lost. He discovered that when customers are lost, poor salespeople are responsible for 30 per cent, misrepresentation 33 per cent, mistakes 10 per cent, poor store methods 17 per cent, and poor quality 10 per cent.

Russell S. Williams, Gaseteria, Inc., Indianapolis, a member of the association, discussed the proposed marketing code recently promulgated in Chicago. He took an active part in drawing up the code, having been chairman of the committee on committees.

Mr. Williams said that the code would bring about "cooperation and co-ordination within the industry so that wages and taxes may be paid, and profits may be had.

"The code compels you to do nothing which is against good principles but it affords an opportunity to practive sound marketing methods resulting in more profits," he concluded.

L. J. Scheidt, president of the association, presided at the meetings.

Weber Again Heads O.P.M.

COLUMBUS, March 20.—At a meeting of the board of directors of the Ohio Petroleum Marketers Association here March 19, E. V. Weber was reelected president to serve his sixth year in that office.

Weber is president of the Eureka Oil Co., of Reading, Ohio, a suburb of Cincinnati. He has been active in the affairs of the association since its formation 14 years ago, and prior to that time he devoted considerable attention to the Cincinnati Oil Club which has done much to foster better better marketing conditions in the Cincinnati area.

License Postponement Pays

NEW YORK, March 21.—Motor vehicle registration renewals in Connecticut were 80,000 more on March 1, 1936 than on January 1, 1935, according to reports to the American Petroleum Industries Committee. Connecticut postponed its registration date this year in an effort to stimulate use of vehicles during the early part of the year.

New California Leadership Challenge Seen in Sinclair-Doherty Deal

LOS ANGELES, Mar. 20

CREATION of a new organization to challenge present leadership in the marketing activities of the Pacific Coast is forecast as a result of a deal made between Cities Service Co. and Rio Grande Oil Co., subsidiary of Consolidated Oil Corp. Final papers have been signed in an exchange of securities by which Rio Grande has acquired from Cities Service all its proprietary rights in Richfield Oil Co. of California and Pan American Petroleum Co., as well as certain other property. In exchange, Cities Service received a half interest in Rio Grande.

By this deal Harry F. Sinclair, chairman of the executive committee of Consolidated, and Henry L. Doherty, head of Cities Service, will virtually pool their interests in the Pacific Coast oil industry and will jointly attempt to realize their ambitions to secure substantial outlets in this territory. Satisfaction of these ambitions will depend on the ability of the new allies to formulate reorganization plans that will be acceptable to the various committees representing other Richfield and Pan American bondholders and creditors. Although Rio Grande has now become the largest single creditor of the Richfield and Pan American receivership estates, a considerable period of negotiation is expected to be required before conflicting interests can be adjusted.

In June 1935, Cities Service owned $6,383,000 of Richfield bonds and $1,503,000 of Pan American bonds, a total of $7,886,000. The company also had substantial holdings in Richfield common and preferred stock, all of which was reported to be virtually unchanged at the time the deal with Rio Grande was made.

Protective committees representing Richfield and Pan American bondholders control $13,577,000, or 54 per cent of the outstanding Richfield bonds, and $5,838,000, or 64 per cent, of the Pan American bonds, excluding the $1,286,000 held by McDuffie as Richfield receiver.

Pooling of Rio Grande interests with those of various committees would represent control of about 80 per cent of secured creditors' interests in both receivership estates. Unsecured creditors' committees have claims on deposit for $10,162,000, representing about 56 per cent of the total unsecured claims. Possibility was seen that to effect a settlement advantage might be taken of section 77-B of the National Bankruptcy Act, which provides for the compulsory adoption of a reorganization plan when two-thirds of the creditors have accepted it.

ALL legal claims against the receivership estates have been heard and no suits are now pending. Under the terms of the court decree of foreclosure and sale, reorganization plans must be submitted at least 15 days before the date of sale. Following the postponement of the public auction sale of the properties set for Feb. 29, the next sale has been set for Mar. 30. As no reorganization plan has been submitted to date, further postponement is indicated unless a cash offer should be made on Mar. 30, backed by a forfeit bond of about $1,500,000 to guarantee payment of the upset price of $29,600,000 fixed by the court.

When the properties were offered at public sale in February, a conditional cash offer was made but was not considered because of the failure of the bidder to comply with stipulations of the court in regard to terms of purchase.

Standard Oil Co. of California's position now is uncertain. The company first showed its interest in 1932 by making an offer for the properties. The offer was later revised and then withdrawn in 1935, following the sale of the Richfield Oil Corp. of New York to Consolidated. Standard, together with other major California oil companies, was presumed to be watching developments closely and the possibility was seen that some action might be taken by the company at the public auction set for Mar. 30.

Both Richfield and Rio Grande made substantial gains in gasoline sales in 1935, as compared with 1934. Richfield's gain was approximately 10 per cent, and Rio Grande's over 21 per cent. In 1935, Richfield's total taxable sales in California amounted to 116,890,340 gallons, or nearly 8 per cent of the total gallonage of the state. Rio Grande sales in the same period amounted to 37,016,135 gallons, or nearly 2.5 per cent of the state total. If the merger is made and the gallonage maintained, the new organization would control 10.4 per cent of the total California gallonage, which would put it in third place, after Standard and Shell, approximately on a level with Union Oil Co. and ahead of General Petroleum Corp., Associated Oil Co., and The Texas Co.

Richfield's position on Pacific Coast markets has been seriously handicapped by its lack of owned crude supplies as it has had to purchase approximately 75 per cent of its requirements. Rio Grande's situation has been little better and, on the basis of present knowledge, the merged refineries would still have to look to outside sources for nearly 75 per cent of their crude. The extensive marketing organization that Richfield has built up would, however, be of much greater value in the event that present stabilization plans on the Pacific Coast should materialize. Termination of the Richfield receivership would also improve the general market situation through removal of some unfavorable influences inherent in that form of management.

Hunt Stratigraphic Traps for Future Oil Reserves, Levorsen Urges Geologists

TULSA, March 21

THE American Association of Petroleum Geologists, meeting in 21st annual convention in Tulsa, March 19-21, were directed along an avenue of thought new to some, not previously emphasized in the minds of many, by their president A. I. Levorsen, Tulsa, who ended with this meeting the traditional year of service accorded by the association to any president.

The presidential address is always the big event of the first day of the meeting and it is supposed to stimulate mental effort. President Levorsen did not fall short of the high standard associated with the yearly key-note speech. His subject was "Stratigraphic versus Structural Accumulation" but in spite of the formidable title he presented a paper that was comprehensible to the least technical-minded oil producer in the business.

He dwelt at the outset upon the responsibilities of the petroleum geologist. He reminded his association they were looked to by industry and nation to maintain the needed reserves.

"We have become the great, scientific thinking group particularly concerned with the discovery of oil and gas," he said. "While many discoveries have been made in the past by so-called non-scientific methods and undoubtedly will continue as long as there is a 'wild-catter left', yet the future reserves of the nation most certainly cannot be depended upon to come through such haphazard methods. A billion barrels of new oil a year is a large order and the responsibility for finding it is coming to rest squarely upon our shoulders, individually and collectively."

With that task recognized,

By Lawrence E. Smith
N. P. N. Staff Writer

President Levorsen then asked his hearers to consider whether they were equipped to meet the demands.

"We have arrived at our present position of trust almost entirely through our application of the anticlinal theory to the problem of oil discovery and we have attacked the business of locating anticlines, folds and local deformation most energetically," he continued.

"Up to 1925, almost all of our work was surface mapping and there is probably no single county in the United States, underlain by sedimentary rocks, the surface of which has not been scrutinized by a field geologist. In fact, many counties have been examined in minute detail many times by scores of geologists. The core drill was then used to assist in locating folds in those areas which could not be mapped by surface observation, and, particularly in many parts of the Mid- Continent, core drilling flourished and was successfully applied for several years.

"The search was always for closed structures. With the increase in the number of oil wells, subsurface structure mapping became an important part of our work and now occupies the time of a large percentage of our members. For several years contours were made in great abundance and at relatively low cost by magnetic methods, until it was finally learned that these did not necessarily reflect the structure of the sedimentary rocks which contained the oil and gas. Areal photography was used in the search for anticlines with success in many localities and has been and continues to be of particular assistance in the areas characterized by strong folding and inaccessibility.

"Gravity anomalies deter-

Officers of the American Association of Petroleum Geologists. Left to right, seated: William B. Heroy, Consolidated Oil Corp., past president; Ralph D. Reed, The Texas Co., Los Angeles, newly elected president; A. I. Levorsen, consulting geologist, Tulsa, retiring president. Standing, L. C. Snider, Cities Service Companies, New York, editor of association publications; C. E. Dobbin, U. S. Geological Survey, Denver, new vice-president; Charles Row, San Antonio, new secretary-treasurer, and Ernest C. Moncrief, Derby Oil Co., Wichita, retiring secretary-treasurer

mined by the torsion balance are often interpreted into structure and particularly in the Gulf Coast region have been found to assist materially in the search for buried domes and salt plugs. The remarkable progress which has been made in seismic methods during the past few years has resulted in the mapping of structure at great depths with almost uncanny accuracy. The presence of 180 geophysical parties at work in the United States alone is proof of the position which geophysics has reached in the eyes of the practical operator searching for oil.

"However, by whatever method used, the search has been always for local deformation such as anticlines, domes, faults and similar features. We began looking for such structure at the surface by surface methods and we have progressively deepened the plane of our search until we are now actively searching for domes which occur at depths of 5000 to 10,000 feet and in some areas even deeper. The present wave of seismic exploration at these great depths might be said to be the last stand of local structure to escape detection and these geophysical methods are rapidly finding all of the folds and local deformation which were missed by previous methods.

"As each method of structure hunting was developed, it provided a sufficient number of new folds for exploitation so that the current petroleum needs were met. We have all, therefore, drifted along from one structure finding method to another until now we are apparently approaching the real danger of an oversupply of methods and an undersupply of anticlines.

"One major criticism which I think can be made of our approach to the problem of oil discovery is that we have been too closely confined in our efforts to a mere search for local deformation. We have led the oil operators, executives and managers of our oil companies to believe in the magic of the closed structure contour until it is quite generally believed, by both geologists and non-geologists, that our future reserves are largely limited by the extent to which we are able to find new domes and anticlines. Such a philosophy has been adequate and will continue to be so just as long as there are enough anticlines. But, if we are to depend on folding alone, our future discoveries are indeed limited, for we are undoubtedly running low on the supply of untested domes and anticlines. Is it not possible that the dwindling reserve is not so much of oil as it is of closed structure? And is it not possible that this in turn but reflects a dwindling reserve of the logical and speculative thinking necessary to discover oil reserves dependent upon other conditions than structure alone?"

HAVING posed the problem, President Levorsen had something constructive to offer. But first he had a word of warning: "The oil industry is not interested in our contours, in our gravity maxima and minima, in our rock velocities, our theories and such, but it is interested in us only insofar as we can tell where to drill to find barrels of oil. It is our job to find this oil and if we fail, the industry will find someone else to do it."

What, then, is the geologist, with his crop of anticlines, etc. nearing exhaustion, to do to retain his position of leadership in finding oil? The Levorsen suggestion:

"May I suggest a practical constructive geological approach to the problem in a method which has heretofore, with few exceptions, been almost untouched by scientifically trained workers but the casual application of which has accounted for at least a quarter and possibly a third of our past total production? It is the wider, much wider use of stratigraphic methods. . . .

"A stratigraphic trap may be defined as one in which a variation in the stratigraphy is the chief confining element in the reservoir which traps the oil. All oil and gas found so far occur in gravity adjustment within their containing reservoir; in some the dominant trap-forming element is a wedging or pinching-out of the sand or porous reservoir rock, a lateral gradation from sand to shale or limestone, an uplift, truncation and overlap, or similar variation in the stratigraphic sequence.

"Stratigraphic changes, by their very nature, are of broad and widespread extent and once discerned can in many places be traced for long distances. Oil pools which are found in stratigraphic traps are therefore often of large proportions as can readily be shown in such outstanding examples as the East Texas field, in Texas, the Glenn and Nowata pools in Oklahoma and the Coalinga and Midway-Sunset pools in California, not to mention scores of other pools throughout the producing belts.

"Not only are many of the individual pools of major proportions where located at the edge of porosity, but it can be shown that many if not most of our so-called oil provinces—i.e., regions which produce prolifically at a number of places for related reasons—contained in a regional stratigraphic variation early in their history which has, in effect, been a strong controlling factor in the oil accumulation in the region ever since the reservoir rock was buried. Stratigraphic traps and stratigraphic methods are therefore of wide importance.

"These conditions of oil occurrence are not new to geologists, because oil in some of the oldest pools has long been known to have been trapped chiefly by stratigraphic variation in the reservoir rock, yet for some reason these conditions have been generally overlooked or neglected in our scramble for closed structure."

Then, with the Levorsen orientation of their futures, the geologists turned to their three days of discussion. In their meetings they brought out all of the theory and scientific fact concerning which President Levorsen had said the public and the oil industry did not care. But theory and fact, however disguised from the lay mind by technical language, are the working tools of the geologist and these tools are whetted to keener edge in each convention.

There was exulting on Friday

when the news went around that the attendance had set a new record. But a mistake had been made in the count, so the mark of 1827 set nine years ago still stands. This year the total was around 1750. This was registered attendance and included non-members.

Ralph D. Reed, chief geologist for the Texas Co. in California, was elected to succeed Mr. Levorsen. Mr. Reed's was the only nomination. He will be the host to the geologists when they meet in Los Angeles in 1937. That city was chosen in preference to New Orleans, the one other city which pressed its invitation.

Only contest in the elections was between C. E. Dobbin, U. S. Geological Survey, Denver, and Jerry E. Newby, Oklahoma City, for the post of vice-president. The vote was fairly close, Mr. Dobbin winning. He succeeds Frank A. Morgan, Los Angeles. Charles Row, San Antonio, was elected without opposition to be secretary-treasurer, succeeding E. C. Moncrief, Wichita. L. C. Snider, New York, was re-elected editor of the Bulletin, official journal of the association.

TWO subsidiary organizations, the division of paleontology and mineralogy and the division of geophysics, held their annual meetings. The paleontologists elected Merle C. Israelsky, Houston, to be their president, succeeding W. H. Twenhofel, Madison, Wis. The geophysicists elected L. W. Blau, Houston, as their president. He succeeded B. B. Weatherby, Tulsa.

Other officers chosen by the paleontologists were Reginald Harris, Norman, Okla., vice-president; Gayle Scott, Fort Worth, secretary-treasurer and Raymond C. Moore, Lawrence, Kans., editor.

Gerald H. Westby, Tulsa, was elected vice-president of the division of geophysics; John H. Wilson, Denver, secretary-treasurer and F. M. Kannenstine, Houston, editor.

THE PANORAMA of PETROLEUM in the Mid-Continent

by

Lawrence E. Smith

TULSA, March 21

INCREASES in crude oil allowable production are general for April. Texas, whose new order was not issued as this was written, is expected to be upped about 20,000 barrels. The Bureau of Mines recommended an 18,000-barrel increase. The same agency recommended an increase of 18,500 barrels for Oklahoma.

East Texas was expected to get a helping. The engineering department of the Railroad Commission found that bottom hole pressures had gained slightly and suggested an allowable of 440,000 barrels daily. This is only slightly more than the official allowable March 15, somewhat under the total, counting "hot" oil. The latter figure is placed by some field estimators at 10,000 barrels daily.

There is some apprehension at these increases, considering the high figures on gasoline in storage. Crude oil purchasers, however, show no signs of fright. They continue to reach out for more oil in whatever districts their lines are located.

Rodessa Not Immediately Disturbing

There isn't enough history on production from the Glenrose series of the Trinity formations to warrant a prediction concerning the meaning of the water in the Rodessa field. A late survey shows 11 wells, scattered through the present producing area, to be making water. The amount ranges from 2 to 19 per cent.

Whether this means much or little, and, as the Glenrose hasn't heretofore been an important producer of oil, the answer is in the future, Rodessa seems to have cooled for the moment as a "menace." One pipeline company is reported to be wondering why it built into the field. Standard Oil Co. of Louisiana, which had a limit on purchases of 15,000 barrels daily from the field, now takes the full allowable of its connections, which is 400 barrels daily.

Another major company has completed survey for a line but has done nothing further, apparently waiting to see what developments will be.

East Texas Refining Co.'s trunk line from Rodessa to Longview, latter point being the location of the company's refinery, is nearly ready to run oil. Contract with Pelican Oil & Gasoline Co. (Glassell and others) is said to call for 5000 barrels daily to be supplied from the Pelican's 12 wells. This pipeline posted tariff of 12½ cents per barrel from Sexton station, at the Rodessa end of the line, to Johns' station, intermediate point on the line, plus 2½ cents per barrel for loading into tank cars. Trunk line rate from Rodessa to Longview is 15 cents.

Texas Pipe Line Co. has established a trunk line rate of 15½ cents per barrel to Port Arthur, plus 7½ cents gathering charge. It has not moved any Rodessa oil to date.

A late report is that the Louisiana, Arkansas & Texas railway will seek permission to establish a rate of 5½ cents per cwt. from Jefferson, Texas, west of the field, to New Orleans. The present rate of the Kansas City Southern from Rodessa to New Orleans is 8.8 cents per cwt.

With the assurance of a pipeline market for all oil produced —which situation prevails at this time—further under-market selling is not likely to occur. Largest of the price-cut deals recently was the nearly 112,000 barrels of Rodessa oil loaded at $1.27 f. o. b. tankers. Figuring in the normal pipe-

line and loading charges, this represented a cut of 11 cents.

Rule 37 Pronounced Valid

J. O. Whittington, East Texas operator, told a three-judge federal court recently that the Texas Railroad Commission's Rule 37, regulating the spacing of wells, was a fiction in East Texas; that of the 20,000 wells in the field 14,000 have been drilled under permits issued in exception to the rule. He raised constitutional questions, also.

The court last week denied the injunction sought, held the rule was valid.

As modified for East Texas purposes, the rule provides for one well to each 10 acres. But there are so many tracts smaller than 10 acres under separate ownership that the exceptions, as Plaintiff Whittington pointed out, did not prove the rule but were the rule.

Spoiling the Fun

Since early 1935, when the Texas legislature passed a law providing for confiscation and sale of "hot" oil, some operators have benefitted by this legal method of clearing for shipment oil which otherwise could not be accounted for. Sales were perfunctory affairs. The original owner, or his representative, would bid at the public sale and nobody else would interfere. The result was low prices for the confiscated material.

A new note was introduced last week when Bryan Payne, of the Iowa-Payne Oil Co., appeared at a sale in Gregg county and paid 90½ cents per barrel for 6296 barrels of crude. Mr. Payne thus neatly defeated the plan of the man who had overproduced the oil expecting to buy it at a low price and convert it from "hot" to legal oil.

Should such competition continue, the eagerness of some to overproduce, bring about confiscation and buy in the oil, will be checked. The profit isn't there at 90 cents per barrel, which goes to the state, plus production costs. Mr. Payne may have made quite a contribution to the cause of enforcement.

All About Pumice

Hearing the rumor that the Barnsdall Corp. was up to something new in the way of marketing pumice stone, we hastened to the office of E. B. Reeser, president of that corporation. The rumor was based on fact, said Mr. Reeser. A deposit of pumice, quite enough to last for a while even though the world should suddenly become pumice conscious, had been found by Barnsdall geologists in the course of looking for oil structures in New Mexico. Through the Barnsdall Tripoli Corp., a subsidiary which has a plant at Seneca, Mo., the pumice is ground and sized for the abrasive industry. The Barnsdall Tripoli Corp. has been producing abrasives for many years.

Mr. Reeser gave us a neat little folder which told about Valencia Pumice, the trademark name of the new product. It told about the confusion which exists in the lay, or nonpumice, mind. It seems that volcanic ash is frequently sold as pumice when it really is pumicite. The latter is termed a mild abrasive while true pumice is more spirited and ferocious.

Our own confusion was not of the kind which the folder described. We wanted to know what the product is used for. Up to then, we had had no experience with pumice tycoons.

Mr. Reeser pondered for a while. We thought he was trying to make up his mind whether to recite the uses in order of importance or alphabetically. Finally he spoke.

"To tell the truth," he said, "the only thing I can remember is that when I was a kid I used pumice to take ink stains off my fingers. That wouldn't be much of a market, would it? I'll have to look it up and let you know."

Whereupon, Mr. Reeser went away to California and we have not yet found out about pumice.

Federal Excise Taxes Are Issue In State Sales Tax Case

CHICAGO, March 23

WHETHER the federal excise taxes of 1 cent a gallon on gasoline and 4 cents a gallon on lubricating oils are part of the sales prices of oil companies, and reported as part of the amount subject to a state sales tax is to be determined in Michigan this week.

This point and several others involving application of the state sales tax law to oil company prices are part of a suit coming before Wayne county (Detroit) circuit court March 25. The Standard Oil Co. of Indiana is the plaintiff.

The state has levied assessments against the Indiana Standard and other oil companies and the suit is to determine the position of prices under the sales tax law.

Another point is whether the cash discount is part of receipts on which the sales tax must be paid, the state contending the tax is to be based on the price before a discount deduction.

Under this point there is the question also of cumulative quantity discounts being part of receipts and included in the tax. The granting of cumulative quantity discounts on lubricating oil sales has been a long time practice within the industry, but Michigan has not recognized the lowering of prices in this practice in computing the sales price for the tax.

The third point at issue concerns transactions where orders may be taken in Michigan, subject to approval of the home office outside the state, when the merchandise is not in Michigan and where delivery requirements are f.o.b. refinery outside the state and the delivery made on this basis.

Standard of Indiana contends such a sale is not subject to the sales tax as it is interstate commerce. The state of Michigan has recognized that the state sales tax does not apply to interstate commerce, but contends that a sale made under these conditions is intrastate, not interstate commerce.

Chemical Processes in the Refining Of Petroleum Distillates

By Jacque C. Morrell and Gustav Egloff*

Part 2

Chemical Changes of Cracked Gasoline in Storage

Peroxides, Aldehydes, Acids and Gums

ONE of the important problems in the storage and sale of cracked gasolines is the maintenance of its desirable properties and the prevention of deterioration, particularly in respect to color and gum formation and antiknock properties. The formation of gum-like substances in cracked gasoline is undesirable because it interferes with the operation of the motor from the gasoline tank through the feed lines, carburetor, manifold and intake valves. The formation of color is undesirable mainly from the sales viewpoint. The deterioration of the antiknock properties is objectionable since it reduces the available energy in the gasoline under high pressure combustion conditions. This deterioration generally is associated with oxidation phenomena occurring in storage and a large amount of study has been devoted to it.

In 1852 Schonbein (1) recognized that turpentine, on exposure to oxygen, formed some compounds of strong oxidizing power. In succeeding years, other unsaturated substances were found to react with oxygen and form highly reactive products. No mechanism of the reaction gained general acceptance until almost simultaneously Engler and Wild (2) published the theory that by direct addition of an oxygen molecule to an unsaturated molecule a peroxide or "moloxide" was formed. In 1904 Engler and Weissberg (3) again presented this mechanism in a review of auto-oxidation, and drew evidence to support it from their own work and that of others on a number of compounds, including amylene, hexylene and fulvenes. They concluded that "most unsaturated hydrocarbons add oxygen more or less easily, with primary formation of peroxides and then further reaction products." The work done on auto-oxidation since this publication has been reviewed by Milas (4).

Olefinic hydrocarbons differ widely in their reactivity with oxygen. Wagner and Hyman (5) showed great variation in the rates of oxidation of the isomeric amylenes by air in the presence of an oxidation catalyst.

A number of investigators have found that diolefins containing conjugated double bonds oxidize and produce peroxides much more readily than olefins of other types. Thiele (6) showed that fulvenes absorb oxygen and resinify with extraordinary rapidity. Birch and Scott (7) stated that conjugated diolefins oxidize much more readily than simple olefins. Cassar (8) reported that his accelerated oxidation test "did not affect simple olefins, but only diolefins." Flood, Hladky and Edgar (9) found that "diolefins as a class are markedly less stable than monoolefins, but the position of the double bonds is important in determining stability. Conjugated double bonds introduce extreme instability, while a compound containing double bonds widely separated is almost as stable as an average olefin." Kogerman (10) arrived at similar conclusions in a study of the hexadienes. Those with separated double bonds did not absorb a measurable amount of oxygen during several months' exposure at room temperature. The isomeric conjugated compounds began to absorb oxygen immediately on exposure, and oxidation continued at a rapid rate. Analysis indicated that in two cases his products were peroxides and in one case a "monoxide" which he believed had formed from a peroxide.

Brooks (11) reported the appearance of peroxides on air oxidation of "unsaturated petroleum oils," and stated that their formation is the most important reaction in gum formation. Kogerman (12), Mardles and Moss (13), Story, Provine and Bennett (14), and Wagner and Hyman (15) confirmed the presence of peroxides in old gasoline. Cassar (16) showed that peroxidized olefins increased the tendency of unstable cracked distillate to gum formation. Yule and Wilson (17) developed a rapid quantitative method for the determination of peroxides in cracked gasoline.

*Universal Oil Products Co., Chicago.

1. Verh. d. Naturf. Gas, Basel, 1. 501.
2. Verh. Natur. Ver. Karlsruhe, 13, 71 (1896); Ber., 30, 1669 (1897).
3. Kritische Studien uber die Vorgange der Autooxidation," Brunswick, 1904.
4. Chem. Rev. 10, 295 (1932).
5. J. Inst. Pet. Tech., 15, 674 (1929).
6. Ber., 33, 666 (1900).
7. loc. cit.
8. J. I. E. C. 23, 1132 (1931).
9. J. I. E. C., 25, 1234 (1933).
10. Trans. 2nd World Power Conf., Berlin, 8, 33 (1934); Brennstoff-Chem., 11, 377 (1930).
11. "Chemistry of Non-Benzenoid Hydrocarbons", Chemical Catalog, New York, (1922).
12. J. I. P. T. 13, 612 (1927).
13. J. I. P. T. 15, 657 (1929).
14. J. I. E. C., 21, 1079 (1929).
15. loc. cit.
16. loc. cit.
17. J. I. E. C. 23, 1254 (1931).

Smith and Cook (18) obtained evidence of aldehydes in aged cracked gasolines and considered them primarily responsible for the formation of gum. Story, Provine and Bennett (19) detected peroxides, acids and aldehydes in gasoline which was being evaporated in a copper dish and in gasoline exposed to sunlight. They came to the conclusion that "the products of the oxidation appear to be principally peroxides, with acids as the chief end product, making up the gum." Yule and Wilson (20) showed that the peroxide method which Story, Provine and Bennett (21) used determined only a small part of the total peroxides in the gasoline. Brooks (22) stated that peroxides, aldehydes, alcohols and ketones "could easily be detected in samples of cracked gasoline which have become slightly oxidized." He reported the identification of formaldehyde, acetaldehyde, propionaldehyde and butyraldehyde in old gasoline. The aldehydes formed, he believed, by the reaction of peroxides with olefins and opposed the conclusion of Smith and Cook (23) that aldehydes are intermediate in gum formation, as he found that addition of aldehydes to gasoline being evaporated did not increase the amount of gum formed. Brooks (24) considered that gum was largely a mixture of peroxides, although the gum formed after a long period of storage contained acidic substances. He also demonstrated the marked influence of oxidized hydrocarbons on gum formation shown in Table 19.

Wagner and Hyman (25) also reported aldehydes, acids and peroxides in old gasoline, and while they confirmed the findings of Brooks that addition of simple aliphatic aldehydes to gasoline did not increase its tendency to form gum, they found that crotonaldehyde did accelerate gumming. They also reported the odor of acrolein in gasoline oxidized under pressure. They postulated reactions giving rise to peracids, which they considered the essential catalysts in gum formation. Yule and Wilson questioned this mechanism, pointing out that a sample of gummy gasoline which had been washed with sodium carbonate and therefore would not contain peracids has just as great an effect in accelerating gum formation in freshly cracked gasoline as if it had not been washed.

Mardles and Moss (26) stated that "the process of gumming appears to be initiated by the primary formation of organic peroxides and the products of oxidation other than peroxides, namely, aldehydes, ketones, acids, etc., were found to have no accelerating effect on the gum rate."

Hoffert and Claxton (27) have reported that aged benzol containing unsaturated hydrocarbons shows the presence of peroxides, aldehydes and acids.

These earlier studies were largely qualitative in nature.

Morrell, Dryer, Lowry and Egloff (28) studied the rates of formation of peroxides and gum quantitatively in a number of samples of gasoline by bomb oxidation and in storage. From these rates some idea of the mechanism by which gasoline deteriorates and gum forms may be obtained.

One of the conclusions which can be drawn from their work is that peroxides are the first products which are detectable when cracked gasoline deteriorates. They form at different rates in different gasolines, and in any one gasoline they build up with time at an increasing rate. As their concentration increases, other changes occur such as darkening in color, gum formation, loss in antiknock value and in susceptibility to inhibitors. Peroxides decrease the effectiveness of inhibitors, but unless present in high concentration do not prevent their action entirely.

THE same authors studied peroxidation of gasoline in relation to its composition by removing certain groups of hydrocarbons and by a study of peroxidation of pure hydrocarbons. The properties of the gasolines were determined after removal of conjugated diolefins and again after elimination of all olefin hydrocarbons. The oxidizability of the pure hydrocarbons was studied by testing the hydrocarbons singly, blended with one another, and blended with gasoline.

In connection with this work a Pennsylvania and a California gasoline, both untreated and treated, were analyzed employing the method of Faragher, Morrell and Levine (29). The bromine numbers were determined according to the modification of the Francis method by adding the bromate solution at 0° as fast as taken up rather than all at one time. The analyses of the cracked gasolines are shown in Table 20.

No relationship is apparent

Table 19

Influence of Easily Oxidized Hydrocarbons on Gum Formation

Expt.	Gasoline	Mg./100 cc.
1	Straight-run gasoline + 2% Limonene	46
2	Refined cracked gasoline + 2% limonene	634
3	Refined cracked gasoline alone	7
4	Straight-run gasoline + 5% isoprene and exposed to light 48 hours	52
5	Refined cracked gasoline + 5% isoprene and exposed to light 48 hours	521

18. Bur. Mines. Repts. Investigations. 2394 (1922).
19. loc. cit.
20. loc. cit.
21. loc. cit.
22. J. I. E. C., 18, 1198 (1926).
23. loc. cit.
24. loc. cit.
25. loc. cit.
26. loc. cit.
27. "Motor Benzol: Its Production and Use", Natl. Benzole Assoc., London, (1931).
28. J. I. E. C. 26, No. 5, 497; No. 6, 655 (1934).
29. loc. cit.

Table 20

	Pennsylvania		California	
	Untreated	Treated	Untreated	Treated
Unsaturates, %	36.89	24.50	38.94	29.77
Aromatics, %	19.81	16.90	13.06	17.83
Bromine No.	64	43	61	54
Induction Period, Min.	65	120	445	No break in 40 hr.

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between the total unsaturated content of these gasolines and their tendency to oxidize as measured by induction period and formation of peroxides. The remarkable stability of the treated California gasoline in spite of its high content of olefins indicates that a large proportion of unsaturated hydrocarbons need not make a gasoline unstable. The properties of gasoline are apparently more dependent on the type of unsaturates present than on their amount. This accords with the findings of Flood, Hladky and Edgar (30) and Wagner and Hyman (31). Conjugated diolefins were removed from the gasoline by treatment with maleic anhydride, which has been shown to react quantitatively with conjugated diolefins by Diels and Adler (32). This reagent was used by Birch and Scott (33) in connection with their work, to which reference has already been made. The treatment did not stop the formation of copper dish gum, although in the California gasolines it greatly reduced it. The reverse of this procedure was tried by adding 2 per cent cyclopentadiene to gasoline which had been treated with maleic anhydride and the induction period was decreased still further. Maleic anhydride treatment, after this addition, restored the induction period to its value where no diolefin was added, although the tendency to absorb oxygen was not eliminated, which indicates that diolefins are not the only hydrocarbons contributing to gasoline instability.

Olefins were removed with sulfur monochloride, in accordance with the procedure of Faragher, Morrell and Levine (34) to remove all unsaturated hydrocarbons. After this treatment the gasolines showed great resistance to oxidation; for example, they were exposed in a bomb for 44 hours at 100 pounds oxygen pressure per square inch at 100° C. without any break in the oxygen absorption curve and a slow drop in pressure.

30. loc. cit.
31. loc. cit.
32. loc. cit.
33. loc. cit.
34. loc. cit.

Regarding the pure hydrocarbons it was found that oxidation of the paraffin hydrocarbons was very slight. Cyclohexane and the aromatic hydrocarbons tested were also difficult to oxidize. Benzene was unchanged, while toluene shows slight peroxidation, which is in accord with the known tendency of an aromatic side chain to be oxidized more easily than the nucleus.

The straight-chain olefins, by contrast, oxidized rapidly and formed gum. Cyclohexene was also extremely reactive, and indene and limonene were the most easily oxidized of the compounds tested. Apparently under these vigorous oxidizing conditions indene goes to other oxidation products than gum, as very little is found in spite of rapid oxygen absorption. Limonene oxidizes readily, although it is not strictly a conjugated diolefin. Possibly the ready oxidizability of cracked distillates is in part due to compounds having structures related to that of limonene.

SOME additional conclusions from this work of Morrell, Dryer, Lowry and Egloff are as follows:

1. The tendency of cracked gasolines to react with oxygen and form peroxides is attributable in part to conjugated diolefins and in part to other olefinic hydrocarbons. Removal of both produces a product extremely resistant to oxidation.

2. The tendency of olefins to form peroxides also differs widely among different members of the series, and with any given olefin is greatly influenced by concentration. A gasoline may contain a high concentration of olefins and yet be very resistant to oxidation. In regard to gum formation, these results confirm those of Flood, Hladky and Edgar (35).

3. Diolefins and olefins present together form more peroxidic compounds and more gum than when present singly in the same concentration.

4. Under the conditions employed, the oxidation of paraffins, cyclohexane and aromatic hydrocarbons is zero or negligible.

35. loc. cit.
36. J. I. E. C. 26, 885 (1934).

Dryer, Lowry, Morrell and Egloff (36) studied the rate of formation of peroxides, aldehydes, acids and gums in gasolines of several origins, some unrefined, some refined, and some of which contained inhibitors. The deterioration was also studied during storage over a period of a year, as well as in accelerated deterioration in the oxygen bomb.

Peroxide can be detected early in the storage period when no aldehyde or acid and practically no gum are present. The rate of peroxide formation accelerates with time. Aldehyde begins to appear somewhat later and increases more gradually than peroxide. Acid formation begins still later, and acid concentration increases more slowly than that of either aldehyde or peroxide.

Gum begins to appear in rather large amount as soon as considerable peroxide has formed and before any large development of aldehyde or acid. The curve of gum content versus time is similar in shape to the peroxide curve, and the conclusions seem justifiable that gum formation is closely related to the concentration of peroxide and that aldehyde and acid are products of secondary reactions rather than intermediates in gum formation.

Smith and Cooke (37) made elementary analyses of gum and concluded that aldehydes formed by breakdown of peroxides were probably of more importance in gum formation than peroxides themselves. Wagner and Hyman (40) also analyzed gum and presented a mechanism of gum formation in which "peracids" from aldehydes were essential catalysts.

Story, Provine and Bennett (38) studied gum formed by evaporation in the copper dish, and concluded that it was largely composed of acids accompanied by unsaponifiable material resembling polymerized aldehydes, ketones or oxides.

Morrell, Dryer, Lowry and Egloff (39) made a further

37. loc. cit.
38. loc. cit.
39. A. C. S. Meeting, San Francisco,

Self-taxation

As long as a refiner goes without a Dubbscracking unit, just so long he is taxing his company

The amount of the tax is the difference between what the company is earning now and what it could earn by Dubbscracking

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study of the formation of peroxides, aldehydes, acids and gums in typical cracked gasoline, particularly as to their distribution between the volatile portion of deteriorated gasoline, the gum dissolved in it, and the insoluble gum precipitated after severe oxidation. The elementary composition of the gum itself was also determined.

Their study shows that gum formed by evaporation of oxidized gasoline is high in peroxides, aldehydes and acids. Gum precipitated from gasoline during oxidation is quite different in composition from the dissolved gum, a pronounced characteristic being its higher content of acidic substances.

If the total amounts of these oxidation products in fractions of oxidized gasoline are compared, the peroxides are usually found to be largely in the residue, the aldehydes fairly evenly distributed in all three cuts, and acids present in particularly large amount in the light fraction.

Study of gasoline being evaporated in gum tests showed that peroxide, aldehyde and acid are formed much faster in a copper than in a glass dish. Evaporation to dryness in the copper dish reduced or completely decomposed peroxides, leaving in the gum high concentrations of aldehyde and acid.

As to the mechanism of gum formation, these authors conclude that to contain large concentrations of peroxides, aldehydes and acids, it is not possible to say that any of these compounds are of no significance in the formation of gum. But the fact that peroxides are present in greatest amount, and that they concentrate in the gum to a much greater degree than do aldehydes and acid, support the earlier conclusion that peroxides are the substances primarily responsible for gum formation.

The use of inhibitors or antioxidants is so closely related to the formation of these peroxides, aldehydes, acids and gum that a statement regarding them is not amiss. The formation of gums with the simultaneous formation of peroxides, aldehydes and acids is undesirable insofar as cracked gasoline is concerned and may be looked upon as a deterioration process. Some cracked gasolines of high quality which are satisfactory for use when first produced deteriorate in storage so that they become dark in color, high in gum and lower in knock rating. Among the many factors which influence the rate of deterioration of stored gasoline, the most important is oxygen. Gasoline out of contact with oxygen or air changes but slowly.

A NUMBER of papers have been published on the application of inhibitors to cracked gasoline. Egloff, Faragher and Morrell (41) studied a number of compounds which protected gasoline, prevented color and increase in gum or arrested drop in knock-rating. Flood, Hladky and Edgar (42) showed the effect of an inhibitor on the rates of oxidation of pure hydrocarbons blended with gasoline. Mardles and Moss checked gum formation by the use of phenol and thymol. Wagner and Hyman reported gum inhibition by hydroquinone.

Rogers and Voorhees (43) have shown that a number of compounds increase the induction period of gasoline. They emphasized the amino-phenols and substituted amino-phenols. Rogers, Bussies and Ward (44) tested the effectiveness of some inhibitors in reducing gum formation in stored gasoline.

Egloff, Morrell, Lowry and Dryer (45) made a comprehensive study on the relationship of the structure of inhibitors to their inhibiting effectiveness. These same authors in a series of papers studied the correlation of inhibiting action and oxidation reduction potential, storage stability of gasoline, peroxides in gasolines, mechanism of gum formation, and the formation of peroxides, aldehydes and acids in cracked gasolines, as well as other studies related to this general subject.

Color in Gasoline

Brooks and Parker (46) conclude that the yellow coloring matter in cracked distillates is due to the presence of hydrocarbons containing conjugated unsaturated groups or diolefins of the conjugated type. This is indicated according to them by the ease of polymerizing these highly unsaturated yellow constituents by dilute acid, by heat alone, by fullers earth, metallic sodium, etc., and by their rapid oxidation to form large proportions of gum. The coloring matter is not due to the presence of impurities containing oxygen and sulfur. The fulvenes are cited as examples of hydrocarbons containing conjugated double bonds which are definitely colored various shades of yellow, orange and red. As experimental proof that the yellow colors may be due to hydrocarbons only, they cracked a pure paraffin, protecting the distillate from oxidizing influences, and the distillate was found to be of a bright yellow color.

They indicate, however, that color of cracked distillates may also be due to the presence of phenols, which are readily oxidized, since cresols have been extracted from such distillates by preliminary alkali washing.

Brooks (47) stated that the most common cause of the discoloration of gasoline is a trace of acidity. Sulfur dioxide and sulfuric acid from its oxidation is the most common cause of this acidity. Oxidation of mercaptans and alkyl disulfide to sulfonic acids may also cause discoloration. Gasolines which have not been acid treated may develop acidity and discoloration. According to Brooks, the function of steam in redistilling acid treated cracked gasolines is to take up the sulfur dioxide formed during ditillation. Alka-

39 *Cont.*—August 19-23, 1935.
40. J. I. P. T. 15, 674 (1929).
41. Am. Petr. Inst., Proc. 10th Ann. Meeting, 11, No. 1, Sec. III, 112 (1930).
42. Paper presented before the Petroleum Division of the 80th Meeting of the American Chemical Society, Cincinnati, Ohio, Sept. 8-12, 1930.
43. Paper presented before the Petroleum Division of the 84th Meeting of the American Chemical Society, Denver, Colorado, Aug. 22-26, 1932.
44. See 2.
45. J. I. E. C. 24, 1375 (1932).
46. J. I. E. C. 16, No. 6, 587 (1924).
47. loc. cit.

lis or oil-soluble bases prevent discoloration.

Egloff, Morrell, Benedict and Wirth (48) made a study of the effect of mercaptans, alkyl disulfides and sulfur on the color stability of gasolines when exposed to an arc light. They consider color stability as divided into two factors — (1) actual formation of color, and (2) development of a milky cloud or haze. The color stabilities of the gasolines were determined by exposing them to light from a carbon arc lamp under controlled conditions. The authors drew the following general conclusions from this work:

1. Mercaptans had no effect on the color stabilities of Mid-Continent gasolines and slightly decreased the stabilities of Pennsylvania cracked and blended gasolines. They caused color and haze formation in the Pennsylvania straight-run gasoline.

2. Alkyl disulfides (a) occurring naturally, (b) added as pure compounds, or (c) formed during sodium plumbite sweetening, caused color and/or haze formation in all gasolines upon light exposure.

3. Sulfur, added alone or in excess during plumbite sweetening, caused marked color and haze formation in the gasolines exposed to light.

4. The presence of both sulfur and disulfides in all the gasolines except Pennsylvania cracked gasoline had more deleterious effects upon color stability than when they were present separately.

5. Contacting sulfur and mercaptan-free gasolines with plumbite solution did not affect their color stabilities.

6. The haze formed upon exposure of the gasoline to light could be removed by passing through filter paper. Color improvements resulted in all cases. The straight-run gasolines showed very marked improvement returning to almost the original color upon removal of haze by filtration, showing that the apparent color of the unfiltered gasoline was mainly due to suspended particles. Filtration of cracked gasolines resulted in clarification with but slight improvement in color, showing that the color produced upon exposure was largely due to soluble colored compounds.

MORRELL, Benedict and Egloff (49) made a further investigation on the photochemical formation of color, haze, gum and reaction products in gasolines in the presence of oxygen, nitrogen and hydrogen, and the factors involved in the same. The source of light was a carbon arc lamp used in the earlier work. Their general conclusions from this work are as follows:

1. Refined Mid - Continent straight - run gasoline exposed to the carbon arc light in the presence of air or oxygen developed color, gum, peroxides, acids and aldehydes. The same effects were observed with cracked gasoline and blends. The straight-run and blended gasolines developed haze but the cracked gasoline did not.

2. The formation of gum, peroxides, acids, aldehydes, and haze did not occur in either the straight-run or cracked gasoline in the dark even in the presence of oxygen, sulfur, or both, and at the same temperature as the samples exposed to the arc light. The reactions are therefore photochemical.

3. With oxygen and exposure to light the cracked and blended gasolines formed more gum than the straight-run gasoline.

4. Elementary sulfur increased the formation of color, haze and gum upon exposure of the gasolines to light in the presence of air or oxygen. Cracked and blended gasolines formed more gum with sulfur present than the straight-run gasoline.

5. With nitrogen, carbon dioxide or hydrogen, color and gum formed in the presence of sulfur. Hydrogen sulfide was evolved in all cases.

6. Haze particles contained sulfur dioxide and trioxide and/or corresponding acids and organic material. Most of the acid formed in the gasoline was found in the haze particles which could be removed by filtration through filter paper.

7. Removal of haze by filtration improved the color but did not affect the gum content of the gasoline.

8. Exposure to light and air of straight-run gasoline from which sulfur and disulfides had been removed resulted in no haze formation and only a slight drop in color.

An extension of this work on gasolines was made on the photochemical formation of color, haze and reaction products in pure hydrocarbons. The hydrocarbons used were: n-heptane; 2,2,4 - trimethylpentane; 2-octylene; diisobutylene; cyclohexane; cyclohexene; toluene; cyclopentadiene; pinene; and limonene.

It was concluded from this work that chemical and physical properties of hydrocarbons as indicated by the bromine number and refractive index were unchanged by exposure to light either in the presence or absence of sulfur or n-propyldisulfide. The hydrocarbons could be recovered in as pure state as from the original distillation. It may be concluded therefore that the reactions resulting in the formation of color, haze, peroxides, etc. under conditions of ordinary air exposure affect only a small amount of the hydrocarbons.

The pure hydrocarbons formed no color or haze upon exposure to light, with the exception of benzene, which became colored in oxygen, nitrogen or hydrogen. Peroxides, aldehydes and acids formed upon exposure of the hydrocarbons to light and oxygen. The olefin, cycloolefin, diolefin and terpene hydrocarbons oxidized more readily than the paraffin, cycloparaffin or aromatic hydrocarbons.

Comparison of the work with pure hydrocarbons and with straight-run, cracked and blended gasolines, with and without added sulfur or n-propyldisulfide, shows that the behavior of the gasolines was such as would be expected of mixtures of various types of hydrocarbons. In general, pure hydrocarbons or gasolines from which sulfur and disulfides had been removed were color-stable in light. The response to sulfur of paraffin, cycloparaffin and aromatic hy-

48. J. I. E. C. 27, 323 (1935).

49. Paper presented before the American Chemical Society meeting in New York, April 22-23, 1935.

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Table 21

Induction Period and Storage Life (Pennsylvania Untreated Gasoline)

Inhibitor	Concentration %	Induction Period Min.	Storage Life* Months
Pyrogallol	0.0016	265	17
Wood Tar Distillate	0.010	230	Over 13
1, 5-Dihydroxynaphthalene	0.0020	195	Over 9
—Naphthol	0.0018	170	9
Wood Tar Distillate	0.005	150	9
2-Amino-4-nitrophenol	0.0019	130	5
Catechol	0.0014	130	4
Hydroquinone	0.0014	80	6
None	.....	60	3

*Time required to exceed 10 mg. air jet gum (A.S.T.M. former method A).

drocarbons was similar to straight-run gasoline except that the straight-run gasoline had higher peroxide numbers in oxygen and formed mercaptans in nitrogen or hydrogen. These differences might be accounted for by the presence of unsaturates in the straight-run gasoline. The response of unsaturated hydrocarbons to sulfur was like that of cracked gasoline. The behavior of hydrocarbons containing n-propyldisulfide was similar to gasolines. The disulfides had less deleterious effect on the color stability of unsaturated hydrocarbons and cracked gasoline than it did on the stability of saturated or aromatic hydrocarbons or straight-run gasoline.

Dyes and Color Inhibitors

A large variety of dyes in respect to chemical types and colors have been employed (50) (51) for gasolines to impart distinctive colors to them and to offset to some extent drastic refining to produce a water-white color.

Where a 25 to 30 Saybolt color gasoline is required, inhibitors may be used to stabilize the color in respect to exposure to sunlight and also to prevent haze formation. Several aliphatic amines have been found satisfactory for this purpose.

Use of Gum Inhibitors

A large number of substances may be used as inhibitors but practically, the selection of an inhibitor is a question of economy. Most gasoline inhibitors contain phenolic or aromatic amine groupings or both. Effectiveness usually increases where more than one hydroxyl (phenolic) or amino grouping is present or where they are present together as in amino phenols.

Solubility in gasoline, insolubility in water, volatility and other properties are also deciding factors in the choice of an inhibitor. The inhibitor should impart little or no color to the gasoline.

As examples of results obtained with various inhibitors, the following data may be shown (the induction period being measured by the usual presure bomb accelerated oxidation test) in Table 21 (52).

To show the variation in susceptibility to inhibitors of various gasolines, the data in Table 22 are presented (53).

50. Egloff, Morrell, and Truesdell, Oil and Gas J. 29, No. 42, 133, (1931).

51. Lowry, Egloff, Morrell, and Dryer, J. I. E. C. 27, 413 (1935).

52. Dryer, Morrell, Egloff, and Lowry, J. I. E. C., 27, 15 (1935).

53. Lowry, Dryer, Morrell, and Egloff, Oil Gas J., 33, No. 12, 8 (1934).

(To be continued)

Table 22

Storage Life of Inhibited Gasolines

Gasoline	Concentration Wood Tar Inhibitor, %	Induction Period Min.	Storage Life, Months*
West Texas Reformed, unrefined	0.025	310	Over 18
	None	40	1
Pennsylvania Clay treated	0.0047	285	Over 19
	None	185	7
Mid-Continent unrefined	0.025	340	8
	None	245	5
Mid-Continent refined	0 025	345	16
	None	205	12

*Time required to exceed 10 mg. air jet gum (A.S.T.M. former method A).

Loreco to Rebuild Grease Plant

SHREVEPORT, March 18.—A new grease plant will be built by Louisiana Oil Refining Co., to replace the plant burned recently at its Bossier City refinery, on Jan. 7. The origin of the fire which burned the old plant was undetermined; the loss was approximately $75,000.

Plans for the new plant have not been completed, according to D. W. Harris, president of the company. The needs of the company have been surveyed by Cities Service Co. engineers, and plans are going forward on the project.

British Refinery Extensions Planned

London, March 18.—Enlargements to its refineries, at a cost of more than $5,000,000 by London and Thames Haven Wharves, Ltd., are planned for the near future.

This, together with the extension of another refinery, about which negotiations are still proceeding, will provide a substantial increase in Britain's refining capacity and will cost in all several million pounds.

New Tank Drawings

NEW YORK—The Division of Production Tank Committee of the American Petroleum Institute has published revised detail drawings of standardized riveted tanks. Blueprints or vandyke negatives are available at Dallas headquarters of the institute.

The federal government also is taking part in the Texas Centennial Celebration. This is a photograph of the architect's drawing of the $375,000 U. S. Building which will house one of the largest government exhibits ever assembled for an exposition

TEXAS PREPARES
To Entertain 10,000,000 At Centennial

By ALLEN S. JAMES
N. P. N. Staff Writer

THAT last minute hustle to tidy the house, wash the faces and don clean clothes before the first of the birthday party guests arrive is going on now in Texas. The Lone Star state is preparing to welcome and entertain the millions of guests it has invited to its Centennial Celebration this year.

Every community in the state apparently is striving to handle well whatever part it has been assigned in the program of entertainment. Any civic jealousies that may have sprung up in the early stages of the program's planning seemingly have been erased and there is unmistakable evidence of teamwork now to make the celebration as a whole a complete success.

Many of the communities will have only small parts on the program—mainly that of giving a cheerful though fleeting welcome to visitors as they pass through to the centers of greater activities. In other districts the parts are more important—on their successful handling will depend the creation of the favorable impression of the state and the southwest that Texans desire their guests to obtain.

The official Centennial calendar already lists close to 100 celebrations in various parts of the state. There will be fiestas, pageants, reunions, cowboy ceremonials, rodeos, mardi gras and historic celebrations as well as the central exposition at Dallas and the frontier days pageant at Fort Worth.

Many of the events listed on the official calendar will be of only one to three days duration and will be of interest mainly to those in the communities in which they are held. Some of the events actually are celebrations that are held annually but this year have been swung in behind the centennial banner.

The official Centennial Year celebration was opened Feb. 20 at San Antonio with a Pioneer Days of '36 Celebration of five days duration. Galveston held its Mardi Gras Feb. 21 to 25, and then other cities began having their celebrations, but the magnets that are expected to draw the visitors from other states are the exposition at Dallas and the pageant at Fort Worth, each of which opens on June 6. The exposition at Dallas now promises to be quite an affair. The city pledged in excess of $9,000,000 in cash and property in order to obtain the exposition, the $4,000,000 plant of the State Fair of Texas

The Hall of Transportation and Petroleum is shown here. It will face the Esplanade of State, and will be one of the feature buildings at the exposition

being offered as the site for the exposition.

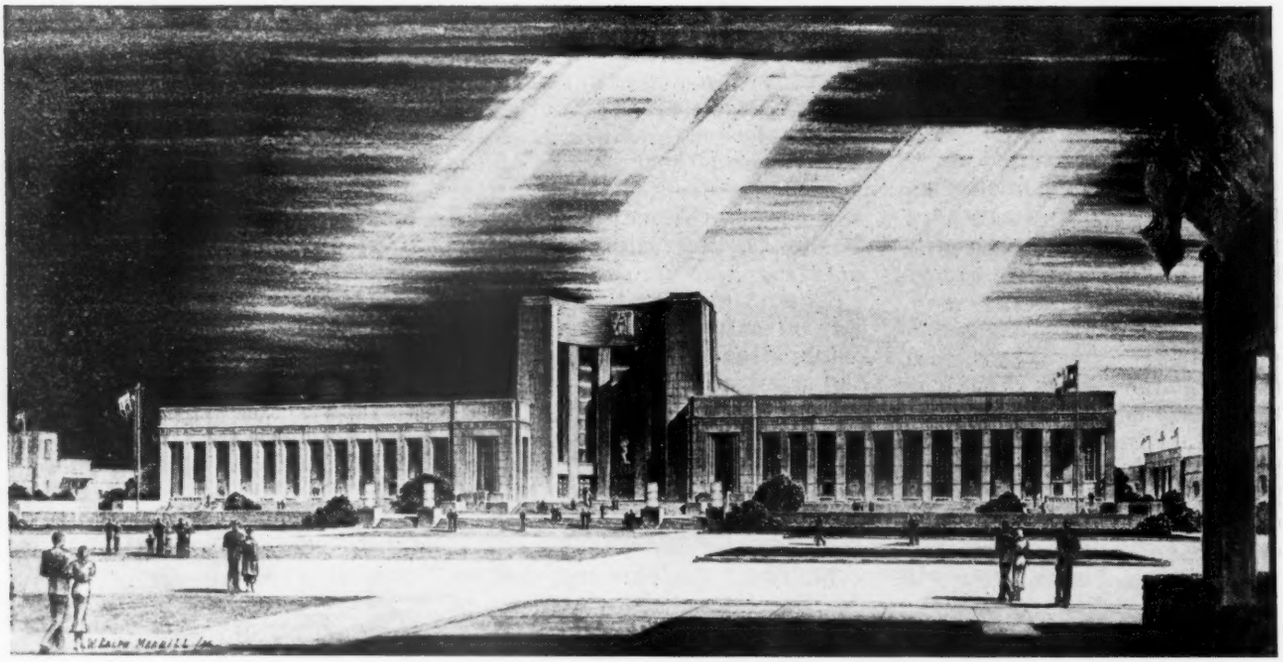
The State of Texas appropriated $3,000,000 for the Centennial, of which $1,200,000 is being spent to erect a permanent building on the exposition grounds. This Texas Building, as it is called, will be the largest on the grounds and will be a permanent historical museum.

Then the federal government, through the U. S. Texas Centennial Commission, is constructing two buildings at the exposition. One is being erected at a cost of $325,000. It will house exhibits of all governmental departments, and is reported to be the largest ever erected at any World's Fair with federal funds. The other building will be known as the Negro Life building, to cost between $50,000 and $100,000.

Other structures will be the Transportation and Petroleum building. Varied Industries, Electrical and Communications, Aquarium, Natural History Museum, Horticultural Hall, Home Planning Building, Band Pavilion, Fine Arts Museum, Food and Agriculture, Livestock, and the various buildings to be erected by exhibitors.

The major exhibitors by groups will be the automotive manufacturers and the oil companies.

The Ford Motor Co. is reported to be planning an exhibit to cost approximately $2,250,000. This company sent a crew of investigators into Texas several months ago to ascertain the sentiment regarding the exposition. On the strength of this first investigation the company decided to spend approximately



One of the largest historical museums in the United States is now under construction at the Central Centennial Exposition grounds in Dallas. The State of Texas is spending $1,000,000 for the building and $200,000 for its furnishings

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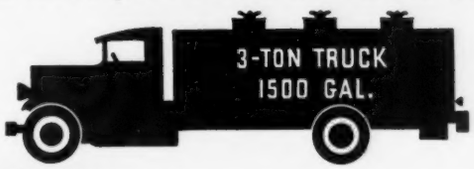

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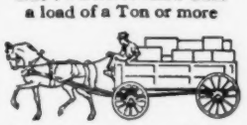
But . . a horse can PULL a load of a Ton or more



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$1,000,000. As a result of a more recent investigation, however, the company has raised its appropriation on the strength of the report that these investigators estimate 10,000,000 persons will visit the Dallas exposition.

Then General Motors Corp. has leased the large auditorium for its large exhibit, and the Chrysler Corp. has taken a major portion of the Travel and Transportation building.

Some of the oil companies will have exhibits within the exposition buildings, while others will have their own structures. The Lone Star Gas Co., for example, is erecting a $50,000 building which is to be turned over to the churches of Texas for their religious exhibits.

Continental Oil Co. is building a $75,000 tourist headquarters for the Texas Centennial. The building will be an air conditioned "Hospitality House" to which all visitors at the exposition will be invited to inquire about roads, meet friends or simply to rest and enjoy a cold drink of water.

Across the rear of the main lounge will run an information desk attended by courteous Conoco travel experts with detailed information about the exposition, Dallas, and other Texas cities and regions. They will also distribute free road maps and booklets describing scenic parts of all the United States, plan return trips for motorists; supply detailed information on conditions of all U. S. highways and complete hotel and cabin camp information.

A $10,000 eight-sided display of unusual spots of natural beauty throughout Texas will occupy the center of the main lounge of "Hospitality House." Illuminated, natural color views of famous vacation Meccas, such as the famous Alamo in San Antonio, will be shown in three dimensions. Three of the eight scenes will be amimated.

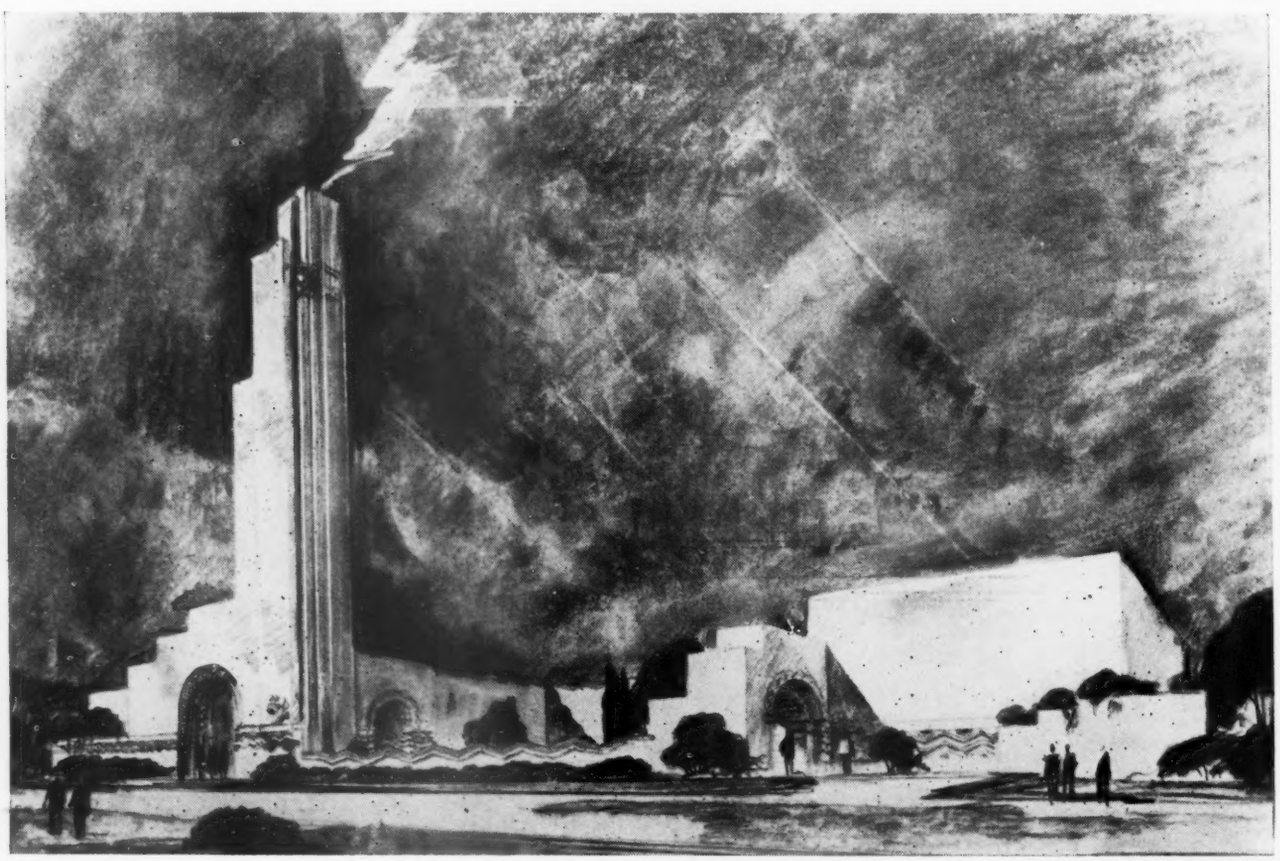
It is still a little too early to describe in detail just what the visitors will see at this exposition. The grounds at present are a beehive of industry with thousands of workmen employed and construction going on 24 hours a day.

From appearances now it would seem that the exposition will have the best features of both the Century of Progress and the San Diego Exposition along with enough of Texas and the Southwest to give the whole affair sufficient flavor of originality to warrant visitors making the trip to Texas. It is estimated that close to $25,000,000 will be spent on the Dallas show by the time it is ready to be opened by June 6 with President Roosevelt as honor guest. It is doubtful now that either the Texas building or the federal buildings will be completed in time for the June 6 opening, but then the exposition is scheduled to last until Dec. 1.

The Fort Worth pageant will take the form of a frontier day village with afternoon and night wild west shows, combined with a live stock show along in October. The federal government has appropriated $250,000 for a permanent building around which will be grouped that city's centennial celebration. The

• • •

A Hall of Religion, built by the Lone Star Gas Co. of Dallas for the churches of Texas to use for religious exhibits, is one of the group of structures planned by oil and gas companies. This is a photograph of the architect's drawing



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Cities Service salesmen in 38 states have gathered the cream of promotion plans that produce. They have produced profitably for others . . . they will do the same for you. These ideas are a part of the Cities Service Proved Sales Plan that sold millions of gallons of new business during the worst years of the depression. Let it help you meet and beat competition . . . increase your gallonage and profits. Write, wire or 'phone today for more details. Don't let competition get you down . . . mentally or financially . . . when you have a sure-fire means of beating it.

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West Texas exhibit probably will be housed in a portion of the federal building.

Texans are planning for Dallas and Fort Worth to be merely the starting points for out-of-state visitors. And there is so much to see in that large state that the point is being stressed that visitors should not stop with seeing the exposition but should visit these other places before returning home.

The easiest and most satisfactory way to see the various points of interest naturally is to travel by automobile. Oil companies accordingly are making every effort to get as many visitors as possible to motor to Texas and then to motor over the state's network of good highways to points other than Dallas and Fort Worth.

There is the Alamo at San Antonio; the foreign settlement at that place and the ancient Spanish missions in the immediate vicinity. There is the fertile Rio Grande valley, and the huge East Texas oil field in its setting of pine woods. There are the great plains and there is the Gulf shoreline with its beaches.

Approximately $750,000 of the state's $3,000,000 appppropriation is being spent for statues and historical markers. The oil companies will provide touring information and the highway department is busy removing the unsightly spots along the main highways.

So confident is Dallas that visitors will come by the thousands in automobiles that plans are being made to set up an elaborate system of rapid communication in order to aid the visitors in finding places to stay. There will be "outposts" on all highways leading into Dallas. Tourists can stop at these outposts, make known the type of accommodations they desire, and while they wait for a few minutes their desires will be phoned to a central bureau which will supply immediately a list of locations nearest the highway on which the tourist has entered the city.

It all begins now to look very much like Texas really is going to have a bang-up, hard-riding and rip-roaring birthday party.

Railroads Try to Prevent Laying Of Alabama Gasoline Pipeline

BIRMINGHAM, Ala. OPPOSITION of the railroads threatens to disrupt plans of the Pure Oil Co. and the Gulf Refining Co. to build a pipeline from the Warrior River near Birmingham to Atlanta. On the refusal of the railroads to grant right-of-ways, a bill was introduced in the Alabama legislature giving them the right of eminent domain, but this measure has for the time being being shelved in committee. Lobbyists for the railroads were on hand to fight the bill to a finish.

IN VIEW of the fight between the two interests, a committee of the Birmingham section of the American Society of Mechanical Engineers, headed by R. A. Polglaze, member of the firm of Polglaze and Basenberg, made a survey of the situation and rendered a report favoring the pipe line project.

This report reads in part:

"This line was contemplated to be constructed several months ago, but due to the opposition of the railroads and their expressed purpose of blocking the construction of the line where it crossed the railroad tracks and across the railroads' rights-of-way, the oil companies have sought other means of accomplishing their purpose and have the assurance of the government officials in Georgia that the right of eminent domain will be granted them and they are being encouraged to build the line either from Savannah, Ga. or some other Georgia port.

"In view of the above the oil companies are somewhat indifferent towards the Birmingham-Atlanta route, unless they can be assured of full appreciation and co-operation of the people of Alabama.

"The project if built, will cost about $2,000,000 for pipeline, compressor stations, additional barges and port facilities at Mobile and the Port of Birmingham. It is estimated that the annual expenditure for operation and maintenance is approximately $500,000.

"The oil companies contemplate serving Birmingham and other Alabama and Georgia towns by branch lines and bulk stations feeding from the main line from Birmingham to Atlanta, and if the railroads cooperate, they contemplate shipping from bulk stations to nearby towns in railroad tank cars. We are informed that under this system of transportation the railroads will actually receive more revenue than they are now receiving for transporting gasoline, this being explained because of the higher short haul freight traffic than the lower rate for long haul traffic.

"We were also informed that as the matter now stands, the railroads of Alabama are not getting any business from the two oil companies as they are transporting gasoline in Alabama by a system of fleets of highway trucks."

The report also stated that the oil companies proposed to use cast iron pipe, manufactured in the Birmingham district, for building the line. This the railroads denied, claiming steel pipe would be used. The main point made by the railroads is that they would lose quite a percentage of freight traffic if the pipeline were built, and that this would throw more people out of work and further curtail their services.

Germany Bans Oil Exports

LONDON, March 16. — The German Ministry of Economics has just published a new list of war materials of which the export has been forbidden. This extends the prohibition of the export of mineral oils to include gasoline of all kinds, synthetic turpentine, petroleum, and gas oil.

ADVERTISING PAGE REMOVED

Bulk plant of H. L. Thatcher, Inc., at Chattanooga, Tenn. The plant is located not far from the foot of historic Lookout Mountain

Five Ways a Tennessee Marketer Found To Cut Plant Operating Costs

By JOHN W. THOMPSON
N. P. N. Staff Writer

NECESSITY has become the mother of ingenuity with many jobbers as they have felt the pinch of narrow operating margins. The restricted income within which they must do business finds these men scanning their properties to discover places where operating economies may be put into effect. The results have often been gratifying.

The economies take many forms. Some marketers have brought about a saving by reducing evaporation losses with pressure-vacuum relief valves for their storage tanks. Some have brought about economies by rerouting their trucks, lessening the per truck distance between dumps, and thus reducing the truck operating cost. Others have found a decided saving in accurately loading trucks at the bulk plant.

An excellent example of successful corner-cutting on operating costs is found in the methods employed by H. L. Thatcher, of Chattanooga, Tenn. Mr. Thatcher is an oil jobber who serves nearly 50 dealers in and near Chattanooga. Although he is the head of his company, his personal relationship to it is separate and distinct. In other words, he is an employe of the company just as is his truck driver or plant manager, and he draws his salary in the same way. Cost records are kept and a reserve fund for depreciation of equipment is provided so that any outlay of cash for replacements does not come as a shock to his personal bank account.

With the average year around temperature in Chattanooga being 67 degrees, marketers in that area enjoy a temperature advantage on gasoline which they receive on a 60-degree basis. There are only three months out of the year in which the temperature averages below 60 degrees; the other nine months the temperature works in favor of the jobber. This accounts in part for the fact that Mr. Thatcher's gasoline losses for a year amounted to only 0.4 per cent (four tenths of one per cent). But even with this low percentage of loss Mr. Thatcher was still not convinced that this loss could not be reduced. This loss still represented upward of 15,000 gallons of gasoline per year which was certainly worth saving if the way could be found to save it.

It was then that Mr. Thatcher set about to find the source of the loss. One day he accurately checked every truck that left the plant after it was loaded and found that in practically every compartment the gauge mark was below the liquid level. He found that in relying solely on this truck tank gauge mark as a measure he was giving away ½ to 1 gallon in almost every

compartment of each truck that left his plant, due to overloading. This meant that he was giving away from 50 to 75 gallons of gasoline every day.

This loss was stopped when a gasoline meter was installed at the truck loading rack. According to Mr. Thatcher, that meter was the best investment he ever made. The meter, however, is not allowed to run on unchecked. Each morning one of the truck compartments which has been filled through the meter is accurately gauged to make certain that the meter is operating correctly.

With the meter reducing his losses to an infinitesimal amount, Mr. Thatcher continued to put still more operating economies into effect. The seven trucks which the company operates each cover a different territory, and each truck driver serves his own territory day after day. In this way the driver becomes well acquainted with the requirements of the customers on his own route and is better able to serve them efficiently.

Each dealer is educated to taking full compartment dumps, a feature which reduces the trips which the truck must make to any one station and insures accurate measure for the dealer.

Another economy is found in the location of dealer outlets. All outlets are in the city or closely bordering it. Mr. Thatcher has had opportunities to obtain dealers who are located 30 miles or more from his plant but he has turned them down, preferring to concentrate his outlets and eliminate the long and costly hauls which he feels would not pay out.

The company's tank trucks are equipped with 14-inch expansion domes over all compartments so that there will be no risk of losing any gasoline from a full compartment during deliveries on warm days.

Common sense economies are also in evidence at the plant. An effort is made to always keep the storage tanks full, thus cutting down the possibilities for vapor losses. Considerable vapor loss is also eliminated by weighing down the pressure valves on top of the storage tanks so that they will not release until a half pound pressure has been built up. This was done after a check to see that the tanks would stand the pressure.

One of the most valuable by-products of efficient bulk plant control and accurate measurement of products, according to Mr. Thatcher, is the effect it has on eliminating dealer shortages. An efficient bulk plant can go a long way toward making a dealer efficient—and profitable.

This 3-inch meter played a large part in reducing the loading rack losses on gasoline at the plant of H. L. Thatcher, Inc., of Chattanooga, Tenn.

Service Station Accident Hazards Avoidable, Safety Man Says

THE six greatest operating hazards at service stations, involving both customers and service men, have been pronounced by Roy S. Bonsib, chief safety inspector of the Standard Oil Co. (New Jersey), as slipping or falling due to poor housekeeping at stations, lubrication hazards from careless use of lifts or equipment, radiator service, tire and air service, windshield service and customers who like to serve themselves.

The causes of these hazards and how they can be avoided in most cases with a little care and precaution, were brought out by Mr. Bonsib in a paper read at a recent meeting of the Petroleum Section of the Detroit Industrial Safety Forum at Detroit.

Contributing mostly to the falling hazard are grease and oil spots left on walks and driveways or soapy water remaining after washing, or broken spots in the pavement, protruding objects such as tops of fill pipes or tools left lying around the station, icy surfaces, and the old-fashioned greasing pit.

Grease and oil spots can be effectively removed with trisodium phosphate. Icy surfaces can be made less slippery by sprinkling sand on the ice, or the ice can be entirely removed by a mixture of sand and flake calcium chloride. Danger of accidents from the old type grease pit comes from the fact that service men often swing themselves into the pit from the bumpers of the customer's car, instead of using ladders provided for their safe descent. Strain and other injuries have resulted from this practice.

The newer type of lubrication hoists and lubricating equipment account chiefly for what are termed "lubrication" hazards. Some customers like to sit in their cars while the car

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PRIVATE LINE Teletypewriter Service connects the New York headquarters of Celanese Corporation with a warehouse in the same city and a plant in Cumberland, Maryland. Four years' usage has proved that the Service provides five major advantages:

1 SPEED AND ACCURACY in transmitting orders and other communications. Orders received in New York are teletyped to Cumberland and production begun the same day. Four copies of each order are made at each end in one typing — no time lost, no errors made in transcribing.

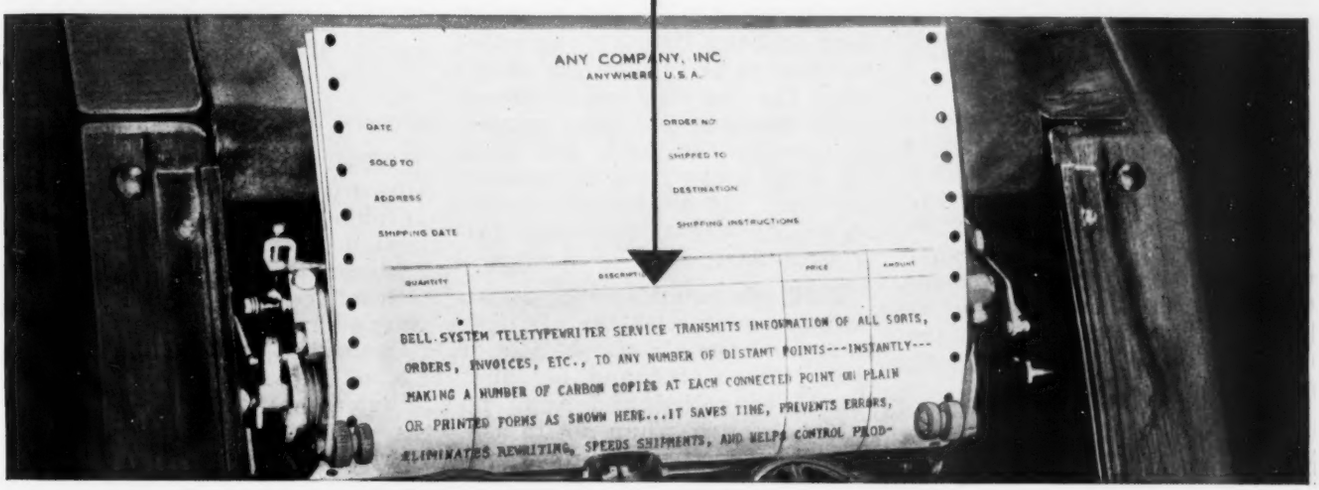
2 UP-TO-THE-MINUTE INVENTORY. Shipping and production reports are teletyped to New York every day. This provides an accurate, up-to-the-minute inventory — permits centralized purchasing, production control, and co-ordinated sales action on slow-moving merchandise.

3 QUICK ACTION ON ORDER CHANGES. Increases, decreases, cancelations, or revised shipping instructions are immediately relayed by teletype to the right department. Customers are quickly advised of the exact status of their orders. This builds good will through better service.

4 CLOSER CONTROL OF DYEING AND FINISHING. Specifications are teletyped from New York as soon as received, enabling the plant to lay out and maintain an advance production schedule. When dyed samples are submitted, approval or rejection is sent at once. The teletypewriter has cut dyeing costs and speeded up completion of dyeing processes — thus deliveries are moved ahead as much as three days.

5 IMPROVED WAREHOUSE OPERATION. Reports of merchandise shipped from Cumberland are received at headquarters early each morning, recorded, and relayed to warehouse. Prompt information enables warehouse to lay out daily working schedule, handle incoming freight faster, and give preference to rush orders.

Tidewater, Shell, Sinclair, and other oil companies use Bell System Teletypewriter Service. It is so fast and flexible it can probably be applied with profit to certain operations of your business.



is being hoisted, but this should never be allowed by service men, even though it is a difficult problem to handle satisfactorily and diplomatically. Some oil marketing companies post this sign conspicuously near the lifts: "Under no circumstances are you to allow anyone in or near the car while it is being raised or lowered."

Sometimes customers, not realizing the lift has left the ground, back out of their cars and fall from two to four feet. Some of these falls have resulted in death, the report states. In one instance, a customer fell off the running board of his truck which was already on the lift when he jumped on it, throwing it out of balance.

Another accident involving lifts is the result of lift carriages being carelessly lowered upon the feet of either employes or customers. Such injuries may be reduced where the runway channels rest directly on the ground by riveting an angle leg on the inside edge of the channel, thus holding the channel about two and a half or three inches above the ground. A greater clearance, however, might cause difficulty to cars driving on and off the lifts.

To forestall accidents to service men while using lubricating guns, definite instructions on their use should be issued. It is believed that when using power grease guns, the flexible hose should be permanently attached, using the adapter when it is necessary to lubricate points equipped with Zerk fittings. With the new needle-point fittings for adapters, men should be cautioned not to "shoot" the grease into their hands to clean out the adapter, due to the danger of puncturing the skin and infecting it with the grease.

Skinned hands and knuckles often result from tools slipping out of hands. Wrenches slipping off plugs when removing them from crankcase plans do so because of use of improper wrench, improper use, defective wrench or defective nut, bolt or fitting. Accidents so caused are often due to greasy hands, tools, nuts, bolts or fittings.

Serious scalds and burns come from boiling radiators not properly handled. Caps should be removed slowly, allowing the steam to escape gradually and not to rush out, which often scalds hands and face. Cold water should not be poured into an overheated radiator when the water supply is low, but the engine should be allowed to cool before adding water.

AMONG the windshield service hazards are cuts on hands from the windshield, the wiper or sun visor. These cuts may be avoided while cleaning cracked or broken windshields by keeping a cloth or chamois between the hand and the glass. In this kind of servicing, standing with one foot on the ground and one on the running board is unsafe. Service men should never brace themselves with their hands or fingers in door jambs, as it is possible customers will slam the door on their fingers. Nor should salesmen close the car door without carefully watching hands or fingers in the way. It is advisable to let the customer close his own door, especially if he opened it.

To avoid accidents from the explosion of tires when inflating them, service men should particularly watch the position of their bodies and heads during this process. They should never squat down facing the tire. They should take a position where the head and shoulders are well protected in case of a blowout. If the car has stopped so that the valve stem of the tire is at or near the top of the wheel, the operator should take a position in front or in the rear of the tire and bend over from the waist only, thus keeping the fender between his head and shoulders and the tire. If the valve stem stops at the bottom of the tire, the service man should squat down to one side, partially turning the back and keep the head away from the side of the tire. If a blowout should occur, his face and eyes are fully protected.

Children should never be allowed to play with the air hose or around the air stand, lifts or pits. The water and air hose should be coiled and hung up out of the way when not in use. Even bicycle tires should be inflated only by the service man, not the customer.

Self-serving customers should be discouraged. He should not be allowed to fill radiators, put air in the tires, wipe his windshield, or do any other similar "chores". Self-service can result in accidents, fires and liability claims, as well as drive away potential customers. A large consumer of gasoline recently stated that whenever he saw a customer puttering around a service station, he drove on to another one. In fact, the best place for a customer at a service station is inside his own car, except when the car is on the lubrication lift.

In addition to this paper by Mr. Bonsib, an excellent article has been prepared by H. N. Blakeslee, of the American Petroleum Institute's Accident Prevention Department, and published in the Jan. 30, 1935 issue, page 50. The Institute's accident prevention department has also published a manual on operation of service stations which discusses all angles of the accident problem.

Fined for Theft Conspiracy

NEW YORK, March 17.—John and Anthony Priesendorf, of the Ever-Ready Oil Co., of Hackensack, New Jersey and the Star Fuel Oil Co. of Ridgefield, N. J., have been fined $2000 each by Judge Edward McGrath in the quarter sessions court at Elizabeth, N. J. The men also were given a sentence of one to three years in state prison, but it was suspended on payment of the fine. They pledge non vult last month to an indictment charging conspiracy to steal gasoline from the Warner-Quinlan Co. refinery, at Linden, N. J.

Heads Water Transport Group

NEW YORK, March 16.—J. Howard Pew, Sun Oil Co., Philadelphia, has been appointed chairman of the American Petroleum Institute's Central Committee on Tanker and Barge Transportation for 1936.

Robert F. Hand, Standard Oil Co. of New Jersey, New York is vice-chairman and D. V. Stroop of the Institute's staff is secretary.

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- En-ar-co Motor Oil backed up by over half a century of refining
- En-ar-co Penn Motor Oil—Pennsylvania Oil at its best
- En-ar-co Lubricants and Greases for every type of lubrication
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After all, it's the En-ar-co name that counts, for En-ar-co supremacy has been built up in the minds of motorist buyers by years and years of value-giving. Your reputation and business are safe with En-ar-co.

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Dubuque, Ia.

One of the tank wagons used by Eckert Oil Co. in serving the rural trade around Racine, Wis.

Wisconsin Jobber Collects Old Debts And Keeps Customers Buying

IRVING ECKERT, president of the Eckert Oil Co., Racine, Wis., is collecting old accounts that accumulated early in the depression. What is more to the point he is retaining the trade of the delinquent customers. This is a difficult trick as William Shakespeare discovered some 300-odd years ago when he warned that both account and friendship often are lost when a debt is created.

When Eckert found, back in 1930-1931, that many of his regular route customers couldn't pay up on their accounts, he was faced with the problem of taking them off his list, but he knew if he did that he would not have much chance of collecting those old accounts. And if such customers ever got into better circumstances and could buy quite a bit of gasoline and oil, he would not get this future business.

After a lot of figuring and head scratching Eckert decided on a definite plan of action. He went to the first delinquent customer on his several routes.

"This depression is going to work a hardship on both of us," he said, "particularly that unpaid balance you owe me. You say you can't pay it now. All right, let's continue to do business on a new basis, and handle that overdue account as a special item."

"What do you mean?" asked the customer.

"Well," said Eckert. "let's say that everything you buy from me from now on is on a strictly cash business. That's the best basis for all of us during this depression. Then on that old account you make a small monthly payment to me until it is cleaned up."

The customer sighed with relief. "That's certainly a fair proposition. But, 'dubiously,' I couldn't pay you much every month. I got a lot of things to meet. Maybe couldn't give you even more than $4 a month."

"I'll take it," said Eckert. "That makes $48 a year on the old account. It runs $72 in all. It'll take us a year and a half to clean it up, but that's okay, because we'll be on a cash basis on new business."

"Sure," said the customer. "I have always liked your company and drivers, and I'd like to continue doin' business with you. But that old bill had me worried."

Eckert put this collection system into operation on all his routes and trained his drivers in diplomatic approaches to the collection problem. It has worked out very well, he states. In some instances he has found that he has had to accept monthly payments as low as $2 a month.

"The trouble with former collection systems was that we let a man have credit for too long a period before attempting to collect," says Mr. Eckert. "Today our firm has less money on the books than we ever had. We have collected several thousand dollars on old accounts through our easy monthly installment collection plan, and we are tickled it has worked out that way.

"When one stops to consider that this money is coming from accounts that are three and four years old, it can be seen that the system works. However, I will say that if we hadn't maintained regular contact with all these accounts, it would have been difficult to get our money. But by working with our customers rather than antagonizing them by demanding full payment in a lump sum, we have made profit dollars out of many loss dollars on our books. Had we lost all that money we couldn't have stayed in business during the past difficult years."

Once in a while a farmer customer tells Mr. Eckert or one of the drivers that he cannot pay his monthly installment, for he lacks the money. He is then given a verbal extension until the next month when he can either pay one or two installments.

No agreements are signed by either parties, the word of buyer and seller being respected by each. Mr. Eckert doesn't believe he could have made his delinquent customers sign an installment agreement, but that this verbal plan works out much better, for sometimes an account will let one month or even two slip by without making a payment. But if reminded regularly such accounts will resume the small payments when possible and the old accounts will gradually be cleaned up.

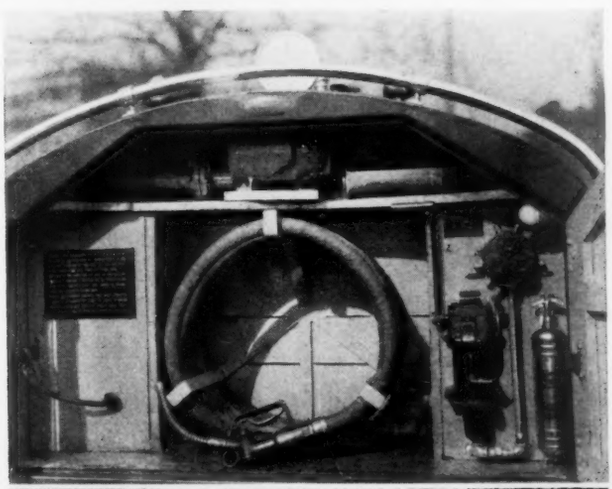
"Another valuable feature of the plan is that it has gotten a large percentage of customers into the habit of paying cash for their gasoline and oil purchases," states Mr. Eckert.

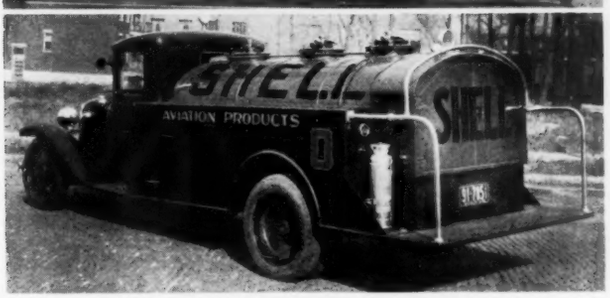
Let the Underwriters' Laboratories Do Your experimenting!

At the left is Type U, one of four different types of S. & J. Hydraulic Internal Valves listed by Underwriters Laboratories

●

Below, a Shell tank truck equipped with the S. & J. Hydraulic Internal Valve System. Note the S. & J. Selective Control and Operator at the left of the fire extinguisher. Shell, like practically every major oil company, is a user of S. & J. internal safety valves





It's much safer—and much more economical—to let the Underwriters Laboratories experiment in their well equipped laboratories than for you to ascertain the same information by running your own experiments on the public highways. They are in the business of testing—you are not.

The Underwriters' Laboratories have concluded their tests on S. & J. Hydraulic Internal Valves and the four types in all sizes are now fully listed and approved. Every fire insurance company—every fire prevention bureau—has been notified that S. & J. valves have been listed.

We've spent our money to have these tests run so as to save your money in experimenting with doubtful devices to accomplish the same result. Good business judgment dictates that there are no advantages in buying any other emergency valves if you can get valves approved by the Underwriters' Laboratories.

Besides offering you this proven and accepted fire safety, the S. & J. valves also give you the positive action of hydraulic pressure for which science has found no substitute. When you can get hydraulic internal valves that are approved by the Underwriters—you are killing two birds with one stone. You just can't afford to experiment with any other method that is not approved by the Underwriters.

Write for a copy of our book "Transporting Inflammable Liquids With Safety." It illustrates and describes the system in detail and shows you how you can save life, liquid, and money. It's free to any petroleum marketer.

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Mary Brought Home an "A"

And the Public Relations of the Oil Industry Were Helped

ABOUT the first member in one oil man's family to get hold of a copy of the Public Educational Number of National Petroleum News was the small daughter attending grade school.

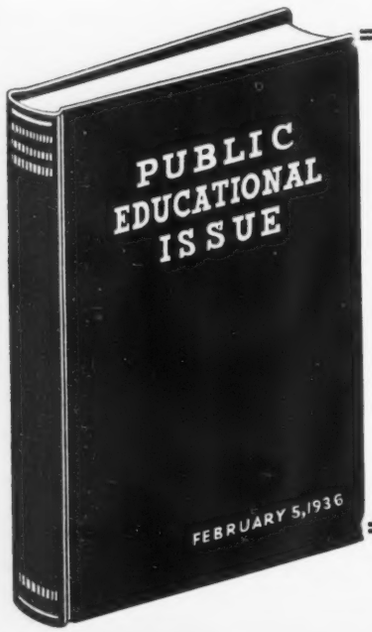
It just happened that her class was studying natural resources. Having her choice of a "topic", she selected oil, gathering her material from this Number. Not only did she bring home a top grade but her teacher wanted to know where she secured the information she put in her theme and asked her to bring the book to class.

So the Public Educational Number went to this city grade school, as it has to many schools, colleges, universities and public libraries over the country.

Many a young mind thus is gaining accurate and authoritative information concerning the oil industry from the many articles, photographs, charts and so on in this issue, which describe in an entertaining fashion all phases of the oil industry. And most important it is that the public relations of the oil business include the young people who will be directing the affairs not only of oil companies, but of all business institutions in a few years; particularly since the subject of natural resources is being given more attention in school work and before the public's mind in general.

Oil men generally could do considerable to advance the public relations of their industry in their own communities, if they would see that this Public Educational Number is placed in their local grade schools, high schools and colleges. Comment coming to National Petroleum News from educational authorities all over the country indicates appreciation of their having a copy of this number for their school libraries, and recognizes the value of the factual data presented in it for purposes of study and reference by pupils of all ages. A number of high schools particularly have written us asking for copies of the Public Educational Number and, in many cases, colleges and universities have asked for extra copies for various departments.

Stop and think where, in your community, are schools where the children should have access to this Public Educational Number in their study of the most important of natural resources—OIL.



Bound volumes of the Public Educational Issue, which numbers 512 pages, can be had in green permanent buckram binding, with attractive gold lettering. $2.25 per copy postpaid.

Every man identified with the oil industry—whether owner, executive or employe—will find this bound volume a most valuable addition to his library . . . at home or office.

SCHOOLS MAKING USE OF PUBLIC EDUCATIONAL NUMBER OF N. P. N.

• Enough Marys and Janes and Bobs and Bills in oil men's families have already gone to the pages of this Number for data in their study of oil as a natural resource in their school work, and teachers in high schools and even grade schools have thus come to know of the issue, to show that copies would be appreciated and serve a useful purpose if placed in such schools generally. Copies of the Educational Number were sent by National Petroleum News to a great many colleges and universities, but high schools and schools for younger people are also now asking for them.

MARKETS

CLEVELAND, March 23

GASOLINE sales suffered another set-back the third week of March as snow and ice returned to some areas and flood waters submerged others. Traders continued to show more interest in kerosine, although actual spring consumption had not gotten under way to any great extent.

Generally speaking gasoline prices were unchanged, although low octane gasoline prices worked higher in the Mid-Continent and Mid-Western markets. This advance represented more a withdrawal of offers than an increase in demand.

Although consumer demand for kerosine did not show the expected increase, prices advanced in the Mid-Continent and Mid-Western markets on the strength of buying by refiners. Kerosine stocks still were below normal and several refiners were attempting to cover their requirements by purchasing on the open market. These refiners therefore, were taking all the kerosine they could get their hands on, thereby causing prices to move upward.

Some observers believed that by the time the plowing season gets under way there will be little kerosine offered on the open market. This was the main reason some of the refiners were on the buying side of the market.

In contrast to the good position of kerosine in the west, prices were easy to lower on the eastern seaboard. Several sellers openly reduced their quotations while others said they would "meet competition."

Pennsylvania kerosine was inclined to be scarce. It was the general belief that it would be more scarce as several refineries in the Pittsburgh area were forced to shut down by flood waters. It will be a week or two before some of them are able to resume operations.

The improvement in gasoline in the west came as the result of a tighter market in East Texas. Demand for East Texas gasoline has increased slightly following arrival of better weather in the southwest. In addition, refinery operations have been somewhat under the rates prevailing a month or two ago. Chicago resellers said little, if any, East Texas gasoline was offered in the Mid-Western market.

The improvement in these prices followed closely the elimination of some off-specification material which had been offered more or less generally at from 0.25 to 0.5 cent under quoted prices for full specification gasoline.

Gasoline from North Texas and West Texas also was quoted at slightly higher prices so that virtually all the low octane gasoline quoted on Group 3 basis had a price of at least 5 cents on it. Middle octane gasoline quotations generally were unchanged.

Cargo markets at the Gulf were mostly unchanged. The only open market cargo sale reported during the week was for Grade C bunker oil for domestic shipment. There were several inquiries for additional cargoes of the same oil but as far as could be determined none materialized as orders.

The one transaction in bunker oil was made at 80 cents a barrel, up 5 cents in the last two weeks. However, due to a corresponding drop in tanker rates the spread between Gulf prices and prices at the eastern seaboard remained unchanged.

The decline in tanker rates reflected the reduction in demand for boats following the end of the fuel oil season. There were more "dirty" boats available and rates were down somewhat.

Floods cut into consumption of gasoline along the eastern seaboard. A large part of New England, portions of New York, Pennsylvania, Maryland, and Virginia were hit by high water which made highway travel next to impossible. Some companies reported that their bulk plants at some points had been carried away together with their inventories. As far as could be determined tank car and barge gasoline prices were not affected by the curtailed consumption. Stocks in most cases still were in fairly good shape at most terminals along the eastern seaboard.

The marketing territory of the western Pennsylvania refiners was hit by snow and ice in addition to floods. Western New York and northern Ohio being covered with snow and ice while western Pennsylvania and parts of Ohio and West Virginia along the Ohio River were inundated. Pennsylvania gasoline, however, remained in good shape, and higher prices were talked in some quarters.

Lubricating oils remained unchanged during the week. Bright stock prices continued to show improvement and offerings were not as plentiful at current prices. Reports indicated, however, that neutral oils were none too good. A few refiners seemed to be in need of orders. That they would take lower prices on a firm offer was the opinion expressed in some quarters.

On the other hand it was pointed out that the motor oil season was about to get under way. Any material increase in buying would tend to reverse the downward trend in neutral prices.

N. P. N. Gasoline Index

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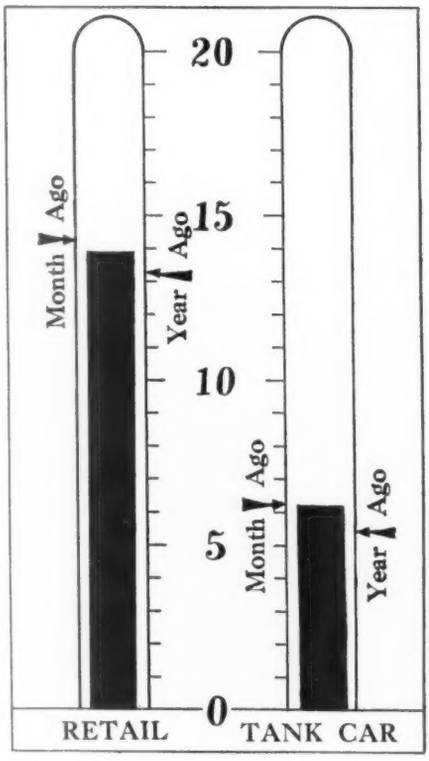

Retail index is an average of 50 cities, ex-tax, and tank car is a weighted average of 13 wholesale markets for middle octane gasoline. The gasoline price index this week represents the following price in cents per gallon:

	Retail	Tank Car
March 23	13.89	6.20
Month ago	14.20	6.23
Year ago	13.20	5.57

California

Gasoline Steadier

LOS ANGELES, March 20

PROSPECTS of stabilizing Pacific Coast petroleum markets at higher levels were improved the past week by the action of a number of independent refiners, who individually advanced the wholesale and retail prices of their competitive brands of gasoline to the level of major company third grade brands.

The movement was initiated March 18 and, although it gained some headway, it did not receive the support of all independent companies and distributors. Competitive gasoline prices did not advance uniformly, but the net result was a notable firming of bulk gasoline quotations in the Los Angeles Basin area, as well as in the San Joaquin and Sacramento valleys, together with a decrease in the quantity of gasoline offered at subnormal prices.

No change was made in tank wagon quotations on major company third grade gasoline, which was nominally posted at 9.5 cents a gallon, inclusive of 4 cents tax, and subject to a discount of 1 cent a gallon to exclusive accounts in the Basin area. Although all secondary companies were supposed to have subscribed to the marketing code that required them to sell their third grade gasoline at the same price as the parent company, some of those affiliates were reported to be posting the scheduled price but still granting secret discounts and rebates in violation of the code. Color was lent to these reports by the fact that a number of independent service stations handling secondary company brands continued to retail gasoline below established prices.

Independent competitive brands of gasoline were nominally quoted at 8.5 cents a gallon, inclusive of tax, delivered at points in the Basin area. Indications, however, were that these quotations were not being adhered to by all refiners, although price cutting was considerably less frequent than in recent weeks.

Because of the number of independent refineries shut down, or operating on reduced schedule, supplies of natural gasoline exceeded demand. Quotations, however, remained unchanged at 5.25 to 5.75 cents, delivered at refinery.

The recent increase in the posted price of heavy crude oil had a tendency to strengthen the price of fuel oil, especially in the Valley area, where quotations on this product at independent plants ranged from 65 to 70 cents a barrel. Purchasing contracts for fuel oil by major companies also tended to firm the market.

Diesel and gas oils were easier and fractionally lower prices were quoted by independent refiners at both Basin and Valley plants.

Temporary boost was given to kerosine-distillate quotations by export shipments of this product to Chinese ports by an independent supplier, who was reported to have purchased some of it from other independents at $1.09 to $1.12 per barrel. Pacific Coast export markets were generally quiet, with no important changes in quotations on other products.

Coastal

Bunker Oil in Demand

NEW YORK, March 21

CONTINUED activity in the bunker oil featured the Gulf Coast market the past week. The only open market cargo sale reported during the week covered bunker oil for domestic use.

The bunker sale reported was for a full cargo of Grade C oil and for domestic lifting in late March or early April, at a price of $0.80 a barrel f.o.b. the Gulf. Several inquiries for bunker oil still were in the market, but only the one deal was reported closed. Traders generally said that none of this oil now was available at under $0.80 a barrel for fairly prompt loading.

Although the cargo price of Bunker C oil has advanced 5 cents a barrel during the past two weeks and no change has been made in shore plant or ships' bunker prices at the Gulf or along the Atlantic seaboard during this period, the general spread between these markets has remained unchanged due to the drop in tanker rates.

A "dirty" boat was chartered late in the week ended March 21 at 25 cents a barrel for movement from the Gulf to North Atlantic. The market two weeks earlier was in the neighborhood of 30 to 31 cents for this movement. The 25-cent charter reflects a decline of approximately 11 cents a barrel from the "top of the market" which was reached during the height of the northern domestic fuel oil season. At that time, movement from the Gulf was heavy and boats were hard to obtain.

Little change was noted in Gulf gasoline markets during the week. No export inquiries were reported and domestic buyers likewise were inactive in the open cargo market.

Light fuel oils and kerosine were fairly steady, although no sales were reported. No change was noted in prices.

Mid-Continent

Gasoline, Kerosine Active

TULSA, March 21

GASOLINE and kerosine featured the Mid-Continent tank car market the third week of March.

Improvement in the East Texas gasoline market was pronounced. Supplies in this area tightened considerably during the week. By the end of the week, it was difficult to obtain immediate shipment on new orders. Increased demand and curtailed refinery operations were responsible for the scarcity of East Texas gasoline.

Interstate shipments for the most part were to the southeastern marketing territory. Little East Texas gasoline was moving through the Chicago market on an open market basis.

By the end of the week, supplies in East Texas were so closely held that several buyers had difficulty in placing orders. One or two East Texas refiners, due to plant shut downs, were attempting to buy from other refiners in that district. They found that regular outlets were absorbing virtually all production.

Prices for East Texas low octane gasoline advanced to a low of 5 cents, f.o.b. plants early in the week. Offers to buy at less than 5 cents were being turned down by refiners selling full specification gasoline.

Even the yellow cracked gasoline from East Texas showed signs of improvement. Several weeks ago this product was selling 0.25 cent under the low octane gasoline. Quotations this week had been advanced to a parity with the low octane motor fuel. This cracked gasoline, however, was not moving readily because of its high gum content.

Gasoline prices in one or two other Texas areas advanced 0.125 cent during the past week. Advances generally were for gasoline sold on an f.o.b. plant basis. North and West Texas refiners quoted low octane gasoline at 5.125 cents and the 63-70 octane at 6.125 cents, f.o.b. plant. Movement at higher prices was steady. Oklahoma gasoline remained steady at generally unchanged prices.

Kerosine inventories were below normal at most Mid-Continent refineries. Some reports indicated additions to stocks were being made in some districts.

An East Texas refiner sold 25,000 barrels of kerosine to be used in flushing out a new pipeline. Shipments were to begin immediately and will continue over several weeks. This purchase removes from the open market one of the large suppliers of East Texas kerosine.

Natural gasoline was unchanged the

past week as a large part of production was moving to the Gulf Coast for storage. The slack in natural gasoline demand was being absorbed mostly by the storage program of several companies at the Gulf Coast. Refinery and jobber demand, while considerably improved over a month ago, still was insufficient to absorb current production.

Wax inquiry was brisker as supplies became scarce. Most Mid-Continent suppliers were asking a low of 2.75 cents, f.o.b. their plants, for the 124-126 wax. Several refiners were sold up.

Export and domestic movement of steam refined stocks resulted in a tight market for the 600 and 631 grades. One supplier reported his April and May output of steam refined stock already was sold. Many inquiries were being received from continental Europe.

Little change was noted in Mid-Continent bright stock and neutral oil. Suppliers indicated they were entering the spring season with comparatively low stocks. Some additions to stocks have been made over the winter months, but they were not excessive or burdensome, refiners said.

Wax

Scale Tight

NEW YORK, March 21.—The market for crude scale wax continued tight the week ended March 21. Traders generally reported that only small quantities were available for prompt movement. Demand was fairly active. Several buyers said that attempts to obtain quotations on scale for delivery the latter half of April and May were unsuccessful, as suppliers were not willing to commit themselves for future shipment.

Quotations varied considerably, depending largely on the size of the order involved. Small lots of 122-124 scale were reported available in the New York market at 2.5 cents, but no sizable quantity was available that low, traders reported. The market at New Orleans appeared to be tighter than at New York, and several suppliers said that 2.75 cents was the lowest price available at New Orleans.

No change was noted in fully refined waxes.

Pipe Standard Published

NEW YORK—American Standards Association has published the "American Tentative Standard on Wrought Iron and Wrought Steel Pipe." Copies are available at association headquarters 29 West 39th St., price 50 cents.

Chicago

Gasoline Rallies

CHICAGO, March 21

THE improvement which has been gradually taking place in the Mid-Western tank car gasoline market has again placed low octane U. S. Motor at a minimum of 5 cents to jobbers.

A fractional advance in prices the past week reflected more the withdrawal of offerings and was not the result of any appreciable increase in jobber takings, which so far this year have been light.

East Texas, which supplied a considerable portion of the gasoline that moved in the Mid-Western open market during February and early March, was not a market factor the week ended March 21. Prices from virtually all East Texas refiners were 0.125 to 0.25 cent higher than quotations in other districts. Some plants in the district refused orders at any price.

About mid-week the market was unsettled by offerings of low octane gasoline at 0.25 cent under general market prices. Investigation disclosed, however, that this product had an unusually high gravity, with a 15 or 16 pound vapor pressure, indicating it contained a high percentage of natural gasoline. There were also reports current that was far from an acceptable third-grade gasoline. After several days, however, this material was absorbed, and the market steadied.

Reports throughout the week indicated that 5.75 cents was the minimum at which good grades of 63-70 octane gasoline could be had. However, offerings of off-color, and sometimes high gum-content gasoline were looking for takers at anywhere from 0.25 to 0.5 cent under this figure. Leaded gasoline was available the early part of the week at 5.75 cents, but this offer was later withdrawn.

Contract movement of gasoline was reported nearly normal last week. Many traders could not reconcile the slow open market buying with contract volume which was maintaining such a relatively high rate.

Kerosine opened the week 0.125 cent higher in all quarters, and prices were tending still higher as the week ended.

The demand for kerosine so far seems to be confined to futures. Buyers were looking for attractive offers of kerosine for shipment over April. This also was true of sellers who were attempting to purchase supplies to apply on April commitments.

Day-to-day takings were light. Many traders believed that when kerosine buying for agricultural purposes gets into full swing, prices will go higher. The return of inclement weather over parts of the middle west, however, was not conducive to early plowing. In some parts of the territory, notably in the northwest, field operations are expected to be delayed about two weeks, unless weather conditions do a right-about-face. Ground is still covered with snow in sections of Minnesota and North Dakota.

Pennsylvania

Shipments At Standstill

CLEVELAND, March 21

HIGH water over much of the western Pennsylvania refinery district slowed up trading considerably the third week of March. Shipments from most refineries were virtually at a standstill as flood waters covered highways and railroads. All refineries in the Pittsburgh district were under at least eight feet of water.

Traders were not able to get in touch with their customers in many areas as telephone and telegraph service was crippled. As a result, prices for most products were largely nominal with quotations generally at around levels prevailing at the end of the previous week.

By the end of the week the water had receded sufficiently in most areas so that some estimates of the damage could be made. It appeared certain that all refineries in the Pittsburgh district would be down for at least two weeks and will have to draw on storage or purchase from other refineries to supply their trade.

Outside the Pittsburgh district it appeared that operations can be stepped up as soon as the railroads are able to resume normal operations. Traders believed that regular service would be re-established within a few days.

Observers were attempting to determine what effect the floods would have on the market. With several refineries shut down for at least two weeks, and one, which in addition to being flooded was completely demolished by fire, it appeared that the status of the market might be strengthened.

On the other hand, there seemed to be no question but what demand will be curtailed as the result of the floods.

Traders outside the flooded area reported there were some signs of spring demand for Pennsylvania motor oil getting under way. Jobbers were feeling out the market, although no general increase in orders was noted.

Jobbers reported finding the market fairly steady. Bright stock was holding firm, they said. Some refiners appeared anxious for neutral oil orders.

Other products showed little change. Kerosine and fuel remained tight and

some refiners were on the buying side of the market. Buyers reported fuel oil was difficult to obtain at most points.

Both high and low octane gasoline prices were unchanged.

Eastern

Demand Light

NEW YORK, March 21

WEATHER conditions were the chief topic of conversation among eastern seaboard traders during the week ended March 21. Floods were rampant in Connecticut, Massachusetts, southern New Hampshire, southern Vermont, portions of New York, Pennsylvania, Maryland and the Virginias, and while reports were hard to obtain from many sections it appeared that highway travel was seriously curtailed.

Companies operating through these areas were getting reports from their bulk plants and distributing points that indicated they were doing practically no gasoline business and in some cases had tanks and inventories destroyed by water. Several companies said that in most cases their inland bulk plants were rather low on both gasoline and fuel oils as barge movement had been hampered by ice and now by the high water.

Generally speaking there were no changes reported in tank car and barge gasoline prices at eastern terminals during the week. Suppliers said that while demand was light, their stocks still were in good shape and they were not forced to sell at lower prices. An advance of 0.5 cent in retail gasoline prices through most of New England brought the market there to within 0.5 cent of normal and tended to steady the wholesale market in that area also. Reports of retail price disturbances were heard from southern New Jersey.

Kerosine demand was reported light at practically all points and prices were lowered by some suppliers. Water white material sold at 4.875 cents in barge lots at New York harbor and reductions of 0.125 cent also was made at Boston.

Correction

Incorrect prices were carried for V. M. & P. Naphthas in tank wagon lots at Baltimore, Philadelphia and Providence, in the March 18 issue, page 63; also for Solvents at Baltimore and Philadelphia. Prices should have remained unchanged over the previous week. Prices entered in the Naphtha tank wagon table applied in tank car lots—a new table added this week.

EVERY OIL COMPANY

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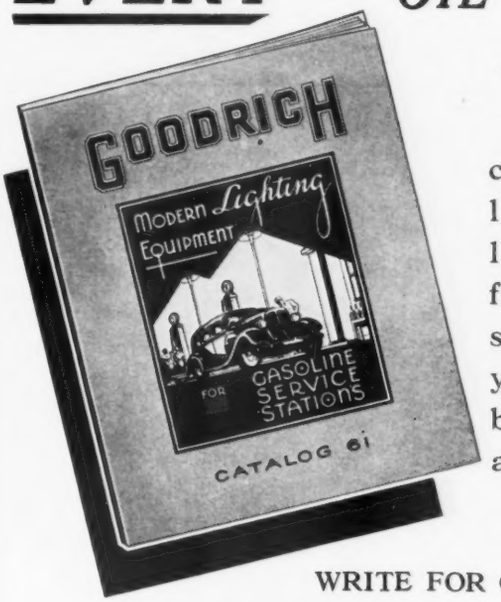

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REFINERY TANK CAR MARKETS

Prices in cents per gallon, tank car lots, except where otherwise noted. Prices are those to domestic jobbers who resell to consumers. They do not represent inter-refinery sales, or sales for export. Federal, state or municipal taxes not included. Prices quoted apply on products made from legally produced crude.

Gasoline *and* Naphtha

Oklahoma	March 23	March 16	March 9
48-54, 450 e.p. naphtha	4.875– 5.00	4.875– 5.00	4.875– 5.00
U. S. Motor gasoline, by octane numbers:			
62 and below (3rd grade)	5.00 – 5.125	5.00 – 5.125	5.00 – 5.125
63-70 octane (regular)	6.00 – 6.125	6.00 – 6.125	6.00 – 6.125
71 and above	.....	.....	.....
60-62, 400 e.p. gasoline	5.00 – 5.125	5.00 – 5.125	5.00 – 5.125
64-66, 375 e.p. gasoline	5.125– 5.25	5.125– 5.25	5.125– 5.25
68-70, 350-360 e.p. gasoline	5.25 – 5.375	5.25 – 5.375	5.25 – 5.375
Western Penna. (Quotations and /or sales prices to car unloaders)			
Bradford-Warren:			
52-54 naphtha	5.50 – 5.625	5.50 – 5.625	5.50 – 5.625
Motor gasoline:			
U.S. Motor (58-62°)	5.625– 5.75	5.625– 5.75	5.625– 5.75
Minimum 60 octane	7.00 – 7.125	7.00 – 7.125	7.00 – 7.125
Minimum 65 octane	7.25 – 7.375	7.25 – 7.375	7.25 – 7.375
Minimum 70 octane	.....	.....	.....
64-66, 390 e.p. gasoline	5.875– 6.00	5.875– 6.00	5.875– 6.00
68-70, 350-360 e.p. gasoline	6.125– 6.25	6.125– 6.25	6.125– 6.25
Other districts:			
52-54 naphtha	5.50 – 5.625	5.50 – 5.625	5.50 – 5.625
54-56 naphtha	5.625– 5.75	5.625– 5.75	5.625– 5.75
Motor gasoline:			
U.S. Motor (58-62°)	5.625– 5.75	5.625– 5.75	5.625– 5.75
Minimum 60 octane	7.00 – 7.125	7.00 – 7.125	7.00 – 7.125
Minimum 65 octane	7.25 – 7.375	7.25 – 7.375	7.25 – 7.375
Minimum 70 octane	.....	.....	.....
64-66, 390 e.p. gasoline	5.875– 6.00	5.875– 6.00	5.875– 6.00
68-70, 350-360 e.p. gasoline	6.125– 6.25	6.125– 6.25	6.125– 6.25
California (3c tax to be added to prices if used in state)			
54-58 U.S. Motor, 437 e.p. for in-state shipment	4.00 – 4.50	4.00 – 4.50	3.75 – 4.50
54-58 U.S. Motor, 437 e.p. for outside state shipment	4.00 – 4.50	4.00 – 4.50	4.00 – 4.50
58-61, 375-400 e.p. gasoline, 65 octane and above	4.75 – 6.00	4.75 – 6.00	4.50 – 6.00
†***North Texas*** (F.o.b. Wichita Falls district for shipment to Texas and New Mexico destinations; Group 3 prices quoted on northern shipments)			
U. S. Motor gasoline, by octane numbers:			
62 and below (3rd grade)	5.125	5.00 – 5.125	5.00 – 5.125
63-70 octane (regular)	6.125	6.00 – 6.125	6.00 – 6.125
71 and above	.....	.....	.....
60-62, 400 e.p. gasoline	5.125– 5.25	5.125	5.125
64-66, 375 e.p. gasoline	5.25	5.125– 5.25	5.125– 5.25
68-70, 350-360 e.p. gasoline	5.375	5.25 – 5.375	5.25 – 5.375
Kansas (F.o.b. refinery, Kansas destination)			
U. S. Motor gasoline, by octane numbers:			
62 and below (3rd grade)	5.25 – 5.375	5.25 – 5.375	5.25 – 5.375
63-70 octane (regular)	6.25 – 6.375	6.25 – 6.375	6.25 – 6.375
71 and above	.....	.....	.....
60-62, 400 e.p. gasoline	5.25 – 5.375	5.25 – 5.375	5.25 – 5.375
†***West Texas and New Mexico*** (F.o.b. W. Texas and N. Mex. refineries for unrestricted shipment)			
U. S. Motor gasoline, by octane numbers:			
62 and below (3rd grade)	5.125	5.00 – 5.125	5.00 – 5.125
63-70 octane (reg.)	6.125	6.00 – 6.125	6.00 – 6.125
71 and above	.....	.....	.....
†***East Texas*** (F.o.b. East Texas refinery for unrestricted shipment)			
U. S. Motor gasoline, by octane numbers:			
62 and below (3rd grade)	5.00	4.875– 5.00	4.875
63-70 octane (reg.)	.....	.....	.....
71 and above	.....	.....	.....
60-62, 400 e.p. gasoline	5.00	4.875– 5.00	4.875
North Louisiana (For Louisiana and Arkansas destination)			
U. S. Motor gasoline:			
62 octane and below	5.75	5.75	5.75
63-70 octane number	6.75	6.75	6.75
71 octane and above	.....	.....	.....
Arkansas (For Arkansas and Louisiana destination)			
U. S. Motor gasoline:			
62 octane and below	5.75	5.75	5.75
63-70 octane number	6.75	6.75	6.75
71 octane and above	.....	.....	.....
Ohio (Quotations of S. O. Ohio. Delivered any point in Ohio).			
U. S. Motor gasoline	8.75	8.75	8.75
Above 65 octane no.	9.00	9.00	9.00

†Refiners generally receive from 0.25c to 0.5c per gallon more for gasoline and kerosine for local or differential territory shipment.

Natural Gasoline

(Prices shown f.o.b. Group 3 and Breckenridge represent majority sales made on dates shown to blenders on the freight basis shown below, although shipments may originate in other manufacturing districts, such as East Texas, Panhandle, Southwest Texas or Kansas).

	March 23	March 16	March 9
F.o.b. Group 3			
Grade 26-70	3.00	3.00	3.00 – 3.125
F.o.b. Breckenridge			
Grade 26-70	3.00	3.00	3.00
California (F. o. b. plants in Los Angeles basin)			
75-85, 375-390 e.p. for blending	5.25 – 5.75	5.25 – 5.75	5.25 – 5.75

Kerosine

Western Penna. (Quotations and /or sales prices to car unloaders)			
Bradford-Warren:			
45 w.w. kerosine	5.25 – 5.375	5.25 – 5.375	5.25 – 5.375
46 w.w. kerosine	5.375– 5.50	5.375– 5.50	5.375– 5.50
47 w.w. kerosine	5.50 – 5.625	5.50 – 5 625	5.50 – 5.625
Other districts:			
45 w.w. kerosine	5.25 – 5.375	5.25 – 5.375	5.25 – 5.375
46 w.w. kerosine	5.375– 5.50	5.375– 5.50	5.375– 5.50
47 w.w. kerosine	5.50 – 5.625	5.50 – 5.625	5.50 – 5.625
Oklaho ma			
41-43 w.w. kerosine	4.25 – 4.375	4.125– 4.25	4.00 – 4.125
42-44 w.w. kerosine	4.375– 4.50	4.25 – 4 50	4.125– 4.25
Kansas (F. o. b. refinery Kansas destination)			
41-43 w.w. kerosine	4.375– 4.50	4.25 – 4.375	4.125– 4.25
42-44 w.w. kerosine	4.50 – 4.625	4.375– 4.625	4.25 – 4.375
†***North Texas*** (F.o.b. Wichita Falls district for shipment to Texas and New Mexico destinations; Group 3 prices quoted on northern shipments)			
41-43 w.w. kerosine	4.125– 4.25	4.125– 4.25	4.125– 4.25
East Texas (F.o.b. East Texas refinery for unrestricted shipment)			
41-43 w.w. kerosine	*4.00 – 4.125	*3.75 – 3.875	*3.75
*Nominal.			
North Louisiana (For Louisiana and Arkansas destination)			
41-43 w.w. kerosine	4.25	4.25	4.25
Arkansas (For Arkansas and Louisiana destination)			
41-43 w.w. kerosine	4.50	4.50	4.50
California (F.o.b. California refineries)			
38-40 w.w. kerosine	3.50 – 5.00	3.50 – 5.00	3.50 – 5.00

Gas *and* Fuel Oils

Western Penna. (Quotations and /or sales prices to car unloaders)			
Bradford-Warren:			
36-40 fuel oil	4.50 – 4.625	4.50 – 4.625	4.50 – 4.625
‡*Other districts*:			
36-40 fuel oil	4.625– 4.75	4.625– 4.75	4.625– 4.75
‡Not including Pittsburgh.			
Oklahoma (F.o.b. Oklahoma refineries)			
No. 1 white fuel oil	3.625	3.625	3.625
No. 1 straw fuel oil	3.50	3.50	3.50
No. 2 straw fuel oil	3.375	3.50	3.50
No. 2 dark fuel oil	3.25 – 3.375	3.375	3.375
U. G. I. gas oil	2.625– 2.75	2.625– 2.75	2.625– 2.75

(*Continued on next page*)

REFINERY TANK CAR MARKETS

Prices in cents per gallon, tank car lots, except where otherwise noted. Prices are those to domestic jobbers who resell to consumers. They do not represent inter-refinery sales, or sales for export. Federal, state or municipal taxes not included. Prices quoted apply on products made from legally produced crude.

	March 23	March 16	March 9
Fuel oils: (Prices per barrel of 42 U. S. gallons)			
28-30, zero	3.125- 3.25	3.25	3.25
28-30	$1.00 -$1.025	$1.00 -$1.025	$1.00 -$1.025
24-26	$0.80 -$0.85	$0.80 -$0.85	$0.80 -$0.85
18-22	$0.725-$0.775	$0.725-$0.775	$0.725-$0.775
14-16	$0.65 -$0.675	$0.65 -$0.675	$0.65 -$0.675
Kansas (F.o.b. refinery, Kansas destination)			
No. 1 prime white	3.875- 4.00	3.875- 4.00	3.875- 4.00
18-22 fuel oil (per bbl.)	$0.80 -$0.825	$0.80 -$0.825	$0.80 -$0.825
10-14 fuel oil (per bbl.)	$0.65 -$0.675	$0.675-$0.70	$0.675-$0.70
North Texas (F.o.b. Wichita Falls district for shipment to Texas and New Mexico; Group 3 prices quoted on northern shipments).			
No. 1 straw, fuel oil	3.50 - 3.625	3 50 - 3.625	3.50 - 3.625
No. 1 white, fuel oil	3.625	3.625	3.625
U.G.I. gas oil	2.50 - 2.625	2.50 - 2.625	2.50 - 2.625
No. 2 fuel oil	3.375- 3.50	3.50 - 3.625	3.50 - 3.625
24-26 fuel oil (per bbl.)	$0.70 -$0.725	$0.70 -$0.725	$0.70 -$0.725
18-22 fuel oil (per bbl.)	$0.675-$0.70	$0.675-$0.70	$0.675-$0.70
West Texas (F.o.b. West Texas refineries for unrestricted shipment).			
No. 2 fuel oil	*3.375- 3.50	*3.375- 3.50	*3.375- 3.50
18-22 fuel oil (per bbl.)	$0.70 -$0.73	$0.70 -$0.73	$0.70 -$0.73
East Texas (F.o.b. East Texas refineries for unrestricted shipment).			
No. 1 white, fuel oil	*3.625- 3.75	*3.50 - 3.625	*3.50 - 3.625
U.G.I. gas oil	2.50 - 2.625	2.50	2.50
No. 2 fuel oil	*3.125- 3.25	*3.25 - 3.375	*3.25 - 3.375
24-26 fuel oil	$0.60 -$0.65	$0.60 -$0.65	$0.60 -$0.65
20-24 fuel oil	$0.60 -$0.625	$0.60 -$0.625	$0.60 -$0.625
North Louisiana (For Louisiana and Arkansas destination).			
No. 2 fuel oil	3.50 - 3.75	3.50 - 3.75	3.50 - 3.75
U.G.I. gas oil	2.875- 3.00	2.875- 3.00	2.875- 3.00
20-24 fuel oil (per bbl.)	$1.05 -$1.10	$1.05 -$1.10	$1.05 -$1.10
16-20 fuel oil (per bbl.)	$0.95 -$1.00	$0.95 -$1.00	$0.95 -$1.00
10-14 fuel oil (per bbl.)	$0.75 -$0.80	$0.75 -$0.80	$0.75 -$0.80
Arkansas (For Arkansas and Louisiana destination)			
No. 2 fuel oil	3.75	3.75	3.75
28-30 fuel oil, zero	3.25 - 3.50	3.25 - 3.50	3.25 - 3.50
20-24 fuel oil (per bbl.)	$0.825-$0.875	$0.825-$0.875	$0.825-$0.875
16-20 fuel oil (per bbl.)	$0.725-$0.775	$0.725-$0.775	$0.725-$0.775
10-14 fuel oil (per bbl.)	$0.60 -$0.65	$0.60 -$0.65	$0.60 -$0.65
California			
San Joaquin Valley, per bbl.:			
Grade C fuel oil	$0.65 -$0.75	$0.60 -$0.75	$0.60 -$0.75
Diesel fuel oil	$1.00 -$1.47	$1.00 -$1.47	$1.05 -$1.47
Stove distillate	$1.20 -$1.89	$1.20 -$1.89	$1.25 -$1.89
Los Angeles, per bbl.:			
Grade C fuel oil	$0.65 -$0.95	$0.65 -$0.95	$0.65 -$0.95
Diesel fuel	$1.00 -$1.47	$1.00 -$1.47	$1.05 -$1.47
Stove distillate	$1.20 -$1.89	$1.20 -$1.89	$1.25 -$1.89
San Francisco, per bbl.:			
Grade C fuel oil	$1.00	$1.00	$1.00
Diesel fuel	$1.68	$1.68	$1.68
Stove distillate	$2.10	$2.10	$2.10

Neutral Oils

Western Penna. (Quotations and/or sales prices to car unloaders)

Viscous Neutrals (Viscosity at 70° F.)			
200 Vis. (180 at 100°) No. 3 color, 420-425 flash:			
0 pour test	23.00 -23.50	23.00 -23.50	24.00 -24.50
10 pour test	22.00 -22.50	22.00 -22.50	23.00 -23.50
15 pour test	21.50 -22.00	21.50 -22.00	22.50 -23.00
25 pour test	20.50 -21.00	20.50 -21.00	21.50 -22.00
180 Vis. (165 at 100) No. 3 color, 410-415 flash:			
25 pour test	19.50 -20.00	19.50 -20.00	20.50 -21.00
150 Vis. (143 at 100) No. 3 color, 400-405 flash:			
0 pour test	19.00 -19.50	19.00 -19.50	20.00 -20.50
10 pour test	18.00 -18.50	18.00 -18.50	19.00 -19.50
15 pour test	17.50 -18.00	17.50 -18.00	18.50 -19.00
25 pour test	16.50 -17.00	16.50 -17.00	17.50 -18.00

South Texas (F.o.b. South Texas refineries, for domestic shipment)

Vis. Color	(*Viscosity at 100° F.; pour test 0*)		
Pale Oils:			
100 No. 1½-2½	5.00	5.00	5.00
200 No. 2-3	7.00	7.00	7.00
300 No. 2-3	7.50	7.50	7.50
500 No. 2½-3½	8.50	8.50	8.50
750 No. 3-4	9.00	9.00	9.00
1200 No. 3-4	9.50	9.50	9.50
2000 No. 3-4	9.75 -10.00	9.75 -10.00	9.75 -10.00
Red Oils:			
200 No. 5-6	7.00	7.00	7.00
300 No. 5-6	7.50	7.50	7.50
500 No. 5-6	8.50	8.50	8.50
750 No. 5-6	9.00	9.00	9.00
1200 No. 5-6	9.50	9.50	9.50
2000 No. 5-6	9.75 -10.00	9.75 -10.00	9.75 -10.00

*Nominal

Note: South Texas red oil prices shown above cover oils with green cast: blue cast red oils are slightly lower in some cases.

Mid-Continent (Viscosity at 100° F.; F. o b. Tulsa basis. Prices represent quotations and sales)

0 to 10 Pour Point:			
Pale Oils:			
Vis. Color			
60-85—No. 2	5.25	5.25	5.25
86-110—No. 2	5.75	5.75	5.75
150—No. 3	10.00	10.00	10.00
180—No. 3	11.25	11.25	11.25
200—No. 3	11.75	11.75	11.75
250—No. 3	13.75	13.75	13.75
280—No. 3	14.75	14.75	14.75
300—No. 3	15.25	15.25	15.25
Red Oils:			
180—No. 5	10.25	10.25	10.25
200—No. 5	10.75	10.75	10.75
250—No. 5	12.75	12.75	12.75
280—No. 5	13.75	13.75	13.75
300—No. 5	14.00	14.00	14.00

Note: Non-Viscous pale oils (60 to 110 Vis.) with a 15 to 25 pour point are quoted 0.5c under 0 to 10 pour test oils; pale and red viscous oils (150 to 300 Vis.) with 15 to 25 pour point are quoted 1c under 0 to 10 pour test oils. Viscous oils (150 to 300 Vis.) with a No. 4 color are quoted 0.5c above No. 5 color oils.

Chicago (F.o.b. Chicago refineries) (Vis. at 100° F.)

Pale Oils, *15 to 30 pour point:			
Vis. Color			
60-85—No. 2	6.50	6.50	6.50
86-110—No. 2	7.00	7.00	7.00
150—No. 3	10.00	10.00	10.00
180—No. 3	11.25	11.25	11.25
200—No. 3	11.75	11.75	11.75
250—No. 3	13.75	13.75	13.75
Red Oils, *15 to 30 Pour Point:			
180—No. 5	10.25	10.25	10.25
200—No. 5	10.75	10.75	10.75
250—No. 5	12.75	12.75	12.75
280—No. 5	13.25	13.25	13.25
300—No. 5	13.50	13.50	13.50

*60-110 vis. oils, with 0-10 pour point, bring 0.5c higher than above prices. Other oils with 0-10 pour point are quoted at 1c higher.

California (F.o.b. California refineries; Viscosity at 100° F.)

All neutral oils, 11.5c per gal. in tank car lots; and 13.5c in iron bbls., to refiners only, excluding federal tax.

Cylinder Stocks

Mid-Continent (F.o.b. Tulsa basis. Prices represent quotations and sales)

Bright Stocks:			
190-200 Vis. at 210° D	20.00	20.00	20.00
150-160 Vis. at 210° D:			
0 to 10 pour test	17.00	17.00	17.00
10 to 25 pour test	16.50	16.50	16.50
25 to 40 pour test	16.00	16.00	16.00
150-160 Vis. at 210° E	16.00	16.00	16.00
120 Vis. at 210° D:			
0 to 10 pour test	16.50	16.50	16.50
10 to 25 pour test	16.00	16.00	16.00
25 to 40 pour test	15.50	15.50	15.50
600 Stm. Rfd. Dark Green	5.50 - 6.50	5.50 - 6.50	5.50 - 6.50
600 Stm. Rfd. Olive Green	6.50 - 8.00	6.50 - 8.00	6.50 - 8.00
631 Steam Refined	*12.00	*11.00	*11.00
Black oil	3.25 - 3.375	3.25 - 3.375	3.25 - 3.375

*Only one refiner quoting.

Chicago (F.o.b. Chicago district refineries (Viscosity at 210°)

Unfiltered Steam Refined:			
140	9.00	9.00	9.00
160	10.00	10.00	10.00
200	11.00	11.00	11.00
Bright stocks, 160 vis. at 210 No. 8 color:			
0 to 10 pour point	18.75	18.75	18.75
15 to 25 pour point	18.25	18.25	18.25
30 to 40 pour point	17.75	17.75	17.75
E filtered Cyl. Stock	14.00	14.00	14.00

Western Penna. (A.S.T.M. tests; quotations and/or sales prices to car unloaders)

600 stm. rfd. filterable	11.50 - 12.00	11.50 -12.00	11.50 -12.00
650 steam refined	12.50 - 13.00	12.50 -13.00	12.50 -13.00

(Continued on next page)

REFINERY TANK CAR MARKETS

Prices in cents per gallon, tank car lots, except where otherwise noted. Prices are those to domestic jobbers who resell to consumers. They do not represent inter-refinery sales, or sales for export. Federal, state or municipal taxes not included. Prices quoted apply on products made from legally produced crude.

Cylinder Stocks (cont'd)

	March 23	March 16	March 9
600 flash	13.50 -14.00	13.50 -14.00	13.50 -14.00
630 flash	17.50 -18.00	17.50 -18.00	17.50 -18.00
600 Warren E	13.50 -14.00	13.50 -14.00	13.50 -14.00
Bright stock, 145-155, vis. at 210°, 540-550 flash, No. 8 color:			
10 pour test	22.00 -22.50	22.00 -22.50	22.00 -22.50
15 pour test	21.00 -21.50	21.00 -21.50	21.00 -21.50
20 pour test	20.00 -20.50	20.00 -20.50	20.00 -20.50
25 pour test	19.00 -19.50	19.00 -19.50	19.00 -19.50

Petrolatums

Western Penna. (Per pound, in barrels, carload lots, f.o.b. Penna. refinery. In tank cars, 0.5c per pound less. Quotations are from majority of petrolatum makers).

Snow White	6.625	6.625	6.625
Lily White	5.625	5.625	5.625
Cream White	4.625	4.625	4.625
Light Amber	2.75	2.75	2.75
Amber	2.50	2.50	2.50
Red	2.00 – 2.125	2.00 – 2.125	2.00 – 2.125

Wax

	March 23	March 16	March 9
Western Penna. (Per pound, f.o.b. New York)			
122-124 wh. crude scale, A.m.p.	2.55 – 2.60	2.55 – 2.60	2.55 – 2.60
124-126 wh. crude scale, A.m.p.	2.60 – 2.65	2.60 – 2.65	2.60 – 2.65
Oklahoma (Per pound in barrels; in few instances, per pound in burlap bags; f.o.b. Oklahoma refineries)			
124-126 wh. crude scale, A.m.p.	2.625	2.625	2.625
Chicago (F.o.b. Chicago district refineries, in cents per pound, in bags, carload lots. Melting points A.S.T.M. method; add 3° F. to convert into A.m.p.)			
Fully refined:			
122-124	4.65 – 4.75	4.65 – 4.75	4.65 – 4.75
125-127	4.90 – 5.00	4.90 – 5.00	4.90 – 5.00
127-129	5.05 – 5.15	5.05 – 5.15	5.05 – 5.15
130-132	*5.45 – 5.55	*5.45 – 5.55	*5.45 – 5.55
132-134	*5.70 – 5.80	*5.70 – 5.80	*5.70 – 5.80
135-137	*6.45 – 6.55	*6.45 – 6.55	*6.45 – 6.55

*Same prices quoted in bags or slabs loose.

MID-WESTERN TANK CAR MARKETS

Following prices are in cents per gallon, except fuel oil in barrels of 42 U. S. gallons, in tank car lots, representing majority of sales of products made by Chicago sellers, from legally produced crude to jobbers on Group 3 freight basis, although shipments may originate in other South-western or Mid-western refining districts. Prices do not include state or federal taxes.

Gasoline

U. S. Motor gasoline:	March 23	March 16	March 9
62 octane and below (3rd grade)	5.00 – 5.125	4.875– 5.125	4.875– 5.125
63-70 octane (reg.)	5.75 – 6.00	5.75 – 6.00	5.625– 6.00
71 octane and above	.....	.....	.....
60-62, 400 e.p.	5.00 – 5.25	4.875– 5.25	4.875– 5.25
64-66, 375 e.p.	5.125– 5.25	5.125– 5.25	5.125– 5.25
68-70, 350-360 e.p.	5.25 – 5.375	5.25 – 5.375	5.25 –5.375

Kerosine

41-43 w.w.	4.125– 4.375	4.125– 4.25	4.00 –4.125
42-44 w.w.	4.25 – 4.50	4.25 – 4.375	4.125– 4.25

Fuel *and* Gas Oils

Domestic:			
No. 1 prime white	3.625– 3.75	3.625– 3.75	3.625– 3.75
No. 1 straw	3.375– 3.50	3.375– 3.50	3.375– 3.50
No. 2 straw	3.25 – 3.375	3.25 – 3.375	3.25 – 3.375
No. 2 dark	3.25	3.25	3.25
No. 3	3.125– 3.25	3.125– 3.25	3.125– 3.25
No. 4 (per bbl.)	$0.975–$1.05	$0.975–$1.05	$0.975–$1.05
No. 5 (per bbl.)	$0.70 –$0.75	$0.70 –$0.75	$0.70 –$0.75
Industrial:			
No. 4, (per bbl.)	$0.875–$0.90	$0.875–$0.90	$0.875–$0.90
No. 5, (per bbl.)	$0.625–$0.675	$0.625–$0.675	$0.625–$0.675
No. 6, (per bbl.)	$0.55 –$0.60	$0.55 –$0.60	$0.55 –$0.60
U.G.I. gas oil	2.375– 2.50	2.375– 2.50	2.25 – 2.375

Naphtha *and* Solvent

Stoddard solvent	6.875	6.875	6.875
V. M. & P. naphtha	7.375	7.375	7.375
Cleaners' naphtha	7.375	7.375	7.375
Mineral spirits	6.375	6.375	6.375
Rubber solvent	7.375	7.375	7.375
Lacquer diluent	8.375	8.375	8.375

DAILY GASOLINE PRICES

Daily range of gasoline prices (cents per gallon) in tank cars, as reported in PLATT'S OILGRAM. (Week Ended March 20, 1936).

	March 16	March 17	March 18	March 19	March 20
U. S. Motor, 62 octane & below (3rd grade):					
East Texas	4.875– 5.00	5.00	5.00	5.00	5.00
*North Texas	5.00 – 5.125	5.125	5.125	5.125	5.125
West Texas	5.00 – 5.125	5.125	5.125	5.125	5.125
Oklahoma	5.00 – 5.125	5.00 – 5.125	5.00 – 5.125	5.00 – 5.125	5.00 – 5.125
Mid-Western (Group 3 basis)	4.875– 5.125	4.875– 5.125	4.875– 5.125	4.875– 5.125	5.00 – 5.125
U. S. Motor, 63-70 octane (regular):					
East Texas	.....	.....	.....	.....	.....
*North Texas	6.00 – 6.125	6.125	6.125	6.125	6.125
West Texas	6.00 – 6.125	6.125	6.125	6.125	6.125
Oklahoma	6.00 – 6.125	6.00 – 6.125	6.00 – 6.125	6.00 – 6.125	6.00 – 6.125
Mid-Western (Group 3 basis)	5.75 – 6.00	5.75 – 6.00	5.75 – 6.00	5.75 – 6.00	5.75 – 6.00
Motor Gasoline, 60-64 octane					
New York harbor	7.00	7.00	7.00	7.00	7.00
Philadelphia district	6.75 – 7.00	6.75 – 7.00	6.75 – 7.00	6.75 – 7.00	6.75 – 7.00
Baltimore district	6.75	6.75	6.75	6.75	6.75
Motor Gasoline, 65 octane & above					
New York harbor	7.25	7.25	7.25	7.25	7.25
Philadelphia district	7.00 – 7.25	7.00 – 7.25	7.00 – 7.25	7.00 – 7.25	7.00 – 7.25
Baltimore district	7.00	7.00	7.00	7.00	7.00
U. S. Motor Gasoline, 58-62°					
Bradford-Warren (Western Penna.)	5.625– 5.75	5.625– 5.75	5.625– 5.75	5.625– 5.75	5.625– 5.75
Other districts (Western Penna.)	5.625– 5.75	5.625– 5.75	5.625– 5.75	5.625– 5.75	5.625– 5.75
Motor Gasoline, Minimum 60 octane					
Bradford-Warren (Western Penna.)	7.00 – 7.125	7.00 – 7.125	7.00 – 7.125	7.00 – 7.125	7.00 – 7.125
Other districts (Western Penna.)	7.00 – 7.125	7.00 – 7.125	7.00 – 7.125	7.00 – 7.125	7.00 – 7.125
Motor Gasoline, Minimum 65 octane					
Bradford-Warren (Western Penna.)	7.25 – 7.375	7.25 – 7.375	7.25 – 7.375	7.25 – 7.375	7.25 – 7.375
Other districts (Western Penna.)	7.25 – 7.375	7.25 – 7.375	7.25 – 7.375	7.25 – 7.375	7.25 – 7.375

*For shipment to Texas and New Mexico destinations; Group 3 prices are quoted on northern shipments.

TANK WAGON, SERVICE STATION MARKETS

Tax column includes 1c federal tax, state gasoline tax, also city and county taxes as indicated in footnotes, and inspection fees, as shown in general footnote. These prices in effect March 23, 1936, as posted by principal marketing companies at their headquarters offices, but subject to later corrections

S. O. New Jersey

Essolene

	Consumer Tank Car	Dealer T.W.	Taxes	Posted S.S.	Kerosine T.W.
Atlantic City, N. J..	7.8	10.3	4	17.8	9
Newark, N. J.....	7.8	10.3	4	17.8	7.5
Annapolis, Md.....	8.1	10.6	5	19.1	10
Baltimore, Md.....	7.5	10	5	18.5	8.5
Cumberland, Md....	9.1	11.6	5	20.1	12.7
Washington, D. C...	7.5	10	3	16.5	9
Danville, Va.....	9	11.5	6	21	12.9
Norfolk, Va.....	7.5	10	6	19.5	11.3
Petersburg, Va.....	8	10.5	6	20	11.7
Richmond, Va.....	8	10.5	6	20	11.7
Roanoke, Va.....	9	11.5	6	21	12.9
Charleston, W. Va...	8.3	10.8	5	19.3	12.6
Parkersburg, W. Va..	7.6	10.1	5	18.6	11.2
Wheeling, W. Va....	8.6	11	5	19.5	12.2
Charlotte, N. C.....	9.2	11.7	7	22.2	12.9
Hickory, N. C.....	9.5	12	7	22.5	13.1
Mt. Airy, N. C.....	9.5	12	7	22.5	13.2
Raleigh, N. C.....	8.9	11.4	7	21.9	12.7
Salisbury, N. C.....	9.3	11.8	7	22.3	13
Charleston, S. C.....	7.5	10	7	20.5	11.3
Columbia, S. C.....	8.8	11.3	7	21.8	12.6
Spartanburg, S. C...	9.2	11.7	7	22.2	12.9

Price basis to undivided dealers: Dealer t.w. price less 0.5c per gal.

Price basis to commercial consumers: Beginning Feb. 11, 1935, all new commercial consumers will be signed on following differentials over tank car price, on yearly purchases: up to 35,999 gals., 2.5c over t.c.; 36,000 to 119,999 gals., 2c; 120,000 to 239,999 gals., 1.5c; 240,000 to 479,999 gals., 1c; and over 480,000 gals., 0.5c.

Above prices apply only when deliveries are made in lots of 50 or 100 gals. at one time, depending on code region in which deliveries are effected.

If deliveries are made in less than these minimum quantities, s.s. price at time and place of delivery applies.

Non-contract customers will be billed at 2.5c over tank car price at time and place of delivery.

Kerosine Discount: 1c off t.w. price for 25 gals. or more, under contract thru territory (Baltimore City contract not necessary) except no discount in state of New Jersey.

Socony-Vacuum Oil Co., Inc.

(S. O. New York Division)

Socony Mobilgas

	"Split" Dealer T.W.	Taxes	Total "Split" Dealer T.W.	S.S.	Kerosine T.W.
Metropolitan N. Y. City:					
Boroughs of Manhattan and Bronx.	9.7	*5	14.7	19.2	7.25
Borough of Richmond (Staten Is.).	9.7	*5	14.7	19.2	7.25
Borough of Brooklyn (Kings and Queens)	9.7	*5	14.7	19.2	7.25
Albany, N. Y.....	9	5	14	17.5	7.75
Binghamton, N. Y...	10.5	5	15.5	19	9
Buffalo, N. Y.....	9.5	5	14.5	18	8.25
Jamestown, N. Y....	10	5	15	18.5	8.25
Plattsburg, N. Y....	9.5	5	14.5	17.5	8.75
Rochester, N. Y.....	9.5	5	14.5	18	8.25
Syracuse, N. Y.....	9.5	5	14.5	18	8.75
Danbury, Conn.....	10.5	4	14.5	18	8
Hartford, Conn.....	10.5	4	14.5	18	7
New Haven, Conn..	9	4	13	16.5	7.5
Bangor, Me.....	10	5	15	18.5	8
Portland, Me.....	9.5	5	14.5	18	7.75
Boston, Mass.....	9	4	13	16.5	7.5
Concord, N. H.....	10.5	5	15.5	19	8.5
Lancaster, N. H....	11.5	5	16.5	20	9.5
Manchester, N. H...	10	5	15	18.5	8
Providence, R. I....	9	3	12	15.5	7.25
Burlington, Vt.....	12	5	17	20.5	8.75
Rutland, Vt.....	9.5	5	14.5	17	8.5

*Plus 2% city sales tax computed at time of each sale.

Discounts to dealers: thru territory, off normal s.s. price, 4c to undivided dealers, and 3.5c to "split" dealers; except Metropolitan N. Y. City, undivided dealers get 5c and divided dealers get 4.5c, effective March 2.

To commercial consumers: Effective Feb. 4, 1935, covering yearly purchases, billed at posted tank car price, plus these differentials: 2.5c for delivery of 1,200 to 36,000 gals.; plus 2c, for 36,000 to 120,000 gals.; plus 1.5c for 120,000 to 240,000 gals.; plus 1c for 240,000 to 480,000 gals.; plus 0.5c for 480,000 gals. and over. Those buying less than 1,200 gals. yearly, get retail s.s. price.

Atlantic Refining

Atlantic White Flash Plus Gasoline

	T.W.	Taxes	Total T.W.	S.S.	Kerosine T.W.
Philadelphia, Pa.....	12	5	17	19	9.5
Pittsburgh, Pa.....	12.5	5	17.5	19.5	10
Allentown, Pa.....	12	5	17	19	9.5
Erie, Pa.....	11.5	5	16.5	16.5	9
Scranton, Pa.....	11.75	5	16.75	16	10
Altoona, Pa.....	12.5	5	17.5	19.5	9.5
Dover, Del.....	12	5	17	17	10
Wilmington, Del....	11.5	5	16.5	16.5	9.5
Boston, Mass.....	9	4	13	16.5	7.5
Springfield, Mass....	10	4	14	17.5	7.5
Worcester, Mass....	9.5	4	13.5	17	7.75
Fall River, Mass....	9	4	13	16.5	7.25
Providence, R. I.....	9	3	12	15.5	7.25
Hartford, Conn.....	10.5	4	14.5	18	7
New Haven, Conn..	9	4	13	16.5	7.5
Atlantic City, N. J..	10.3	4	14.3	17.8	9
Camden, N. J.....	10.3	4	14.3	17.8	8
Trenton, N. J.....	10.3	4	14.3	17.8	8
Annapolis, Md.....	10.6	5	15.6	19.1	9.5
Baltimore, Md.....	10	5	15	18.5	7.5
Hagerstown, Md....	11.1	5	16.1	19.6	10
Richmond, Va.....	10.5	6	16.5	20	11.7
Wilmington, N. C. .	10.1	7	17.1	20.6	11.4
Brunswick, Ga.....	12	7	19	21	*13
Jacksonville, Fla....	10	8	18	20	10

Dealer discounts: on Atlantic White Flash Plus gasoline, thru territory, divided dealers, price equal to 3.5c off posted s.s. price; undivided dealers, price equal to 4c off posted s.s. price; authorized dealers contracts previous to Aug. 19, 1933, price equal to 3c less than posted s.s. price, plus 1c rental.

Price basis to commercial consumer: Effective Oct. 1, 1935, on yearly gasoline purchases based on posted tank car prices plus following amounts: 1,200 to 36,000 gals., 2.5c over t.c.; 36,000 to 120,000 gals., 2c; 120,000 to 240,000 gals., 1.5c; 240,000 to 480,000 gals., 1c; 480,000 gals. and over, 0.5c.

S. O. Ohio

Sohio X-70 Gasoline

Ohio statewide.....	12.5	5	17.5	19.5	*13.5
Counties below statewide gasoline schedule:					
Franklin, Hocking and Jackson:	12	5	17	18.5	....

Renown (Third Grade Gasoline)

Ohio statewide.....	12	5	17	18	....
Counties below statewide gasoline schedule:					
Franklin and Hocking:	11.5	5	16.5	17	....
Counties above statewide schedule:					
Champaign, Clarke, Darke, Fairfield, Greene, Hamilton, Miami, Montgomery, Preble and Summit.....	12.5	5	17.5	19.5	....
Jackson.....	12	5	17	18.5	....

Statewide Prices to Resellers & Agents

(These prices are on sliding scale based on actual spread between S. O. Ohio statewide tank car price and posted local s.s. price).

Including taxes	†Undivided Accounts	Divided Accounts	**Authorized Agents
Sohio X-70....	16	16.5	16.5
Renown (3rd grade)..	15.5	16	16

Note: On single deliveries of motor gasolines under 25 gallons, to t.w. consumers, s.s. price applies.

Sales tax: Ohio's 3% sales tax, effective Jan. 27, 1935, is added "where assessable, to regular posted prices," S. O. Ohio says.

*Kerosine prices include 1c state tax. Kerosine t.w. price in Hardin, Portage, Summit and Wyandot counties is 12.5c; Gallia county is 13c.

†Excluding authorized agents.

**Excluding 0.5c rental.

Discounts to contract tank wagon consumers only: on all motor gasolines thru Ohio, except Hamilton County, effective Dec. 1, 1934, off posted t.w. price, on deliveries per month: 1,000 to 9,999 gals., 1.5c per gal. 10,000 gals. and over, 2.5c. Under 1,000 gals., full t.w. price. Single deliveries of less than 25 gals., full s.s. price. Additional yearly discounts (less amount paid or credited to buyer on monthly purchases), off t.w. price: 12,000 to 119,999 gals., 1.5c, 120,000 gals. or over, 2.5c. In Hamilton county: less than 100 gal. deliveries, full s.s. price; 100 to 3,000 gals., 1.5c off t.w.; 3,000 to 10,000 gals., 2.5c; and over 10,000 gals., 3c off t.w.

Discounts on kerosine: to dealers and commercial consumers, 3c per gal. off t.w. price, any quantity.

S. O. Kentucky

Crown Gasoline

	T.W.	Taxes	Total T.W.	S.S.	Kerosine T.W.
Lexington, Ky.....	13	6	19	21	11
Louisville, Ky.....	13	6	19	21	10
Paducah, Ky.....	12	6	18	19	10
Covington, Ky.....	12.5	6	18.5	20.5	10.5
Jackson, Miss.....	13	7	20	22	*13
Vicksburg, Miss....	12.5	7	19.5	21.5	*13
Birmingham, Ala...	13	*8	21	23	12
Mobile, Ala.....	12	*8	20	22	10
Montgomery, Ala...	13	*9	22	24	*14.5
Macon, Ga.....	13	7	20	22	*14.5
Atlanta, Ga.....	13.5	7	20.5	22.5	*13.5
Augusta, Ga.....	13	7	20	22	*14
Savannah, Ga.....	11.5	7	18.5	20.5	*13
Jacksonville, Fla....	10	8	18	20	12
Miami, Fla.....	11.5	8	19.5	21.5	13.5
Tampa, Fla.....	10	8	18	20	12.5
Pensacola, Fla.....	12.5	*9	21.5	23.5	12

Kyso (Third Grade)

Lexington, Ky.....	11.5	6	17.5	19	....
Louisville, Ky.....	11	6	17	18	....
Paducah, Ky.....	10.5	6	16.5	17	....
Covington, Ky.....	11	6	17	18.5	....
Jackson, Miss.....	11	7	18	19	....
Vicksburg, Miss.....	10.5	7	17.5	18.5	....
Birmingham, Ala....	11	*8	19	20	....
Mobile, Ala.....	10	*8	18	19	....
Montgomery, Ala...	10.5	*9	19.5	20	....
Atlanta, Ga.....	10.5	7	17.5	18	....
Augusta, Ga.....	10	7	17	17.5	....
Macon, Ga.....	10	7	17	17.5	....
Pensacola, Fla.....	11	*9	20	21.5	....

Dealer Discount: off posted s.s. price, on Crown and Crown Ethyl gasolines to "undivided" dealers 4c; on Kyso, 3c. To "divided" dealers. Crown and Ethyl, 3.5c, and Kyso, 2.5c, all effective on or about Jan. 1, 1934.

Discounts to tank wagon consumers: all single deliveries of 50 gals. or less, get posted s.s. price: all single deliveries of 50 gals. or more, to be billed at posted t.w. price, plus following discounts, off posted t.w. price: Ethyl and Crown gasoline, 50 to 2,999 gals. monthly, 1.5c; Kyso, 1c; 3,000 to 24,999 gals., Ethyl and Crown, 2c; Kyso, 1.5c; 25,000 gals. or more, Ethyl and Crown, 3c; and Kyso, 2.5c.

**Taxes*: in the tax column is included these city and county gasoline taxes at the following points: Birmingham, 1c city; Mobile, 1c city; Montgomery, 1c city and 1c county; Pensacola, 1c city. Georgia and Mississippi kerosine prices include 1c state tax Montgomery kerosine price includes 1c city tax.

S. O. Indiana

Standard Red Crown Gasoline

Chicago, Ill.....	10.5	4	14.5	16.5	9.8
Decatur, Ill.....	12	4	16	18	9.8
Joliet, Ill.....	12	4	16	16.5	9.8
Peoria, Ill.....	12	4	16	18	9.8
Quincy, Ill.....	11.8	4	15.8	17.8	9.6
Indianapolis, Ind....	12.9	*5	17.9	19.9	‡14.3
Evansville, Ind.....	12.7	*5	17.7	19.7	‡14.3
South Bend, Ind....	13.1	*5	18.1	20.1	‡14.7
Detroit, Mich.....	10	4	14	16	8
Grand Rapids, Mich.	12.4	4	16.4	18.4	8
Saginaw, Mich.....	12.6	4	16.6	18.6	9.3
Green Bay, Wisc....	12.7	5	17.7	19.7	10.5
Milwaukee, Wisc....	10.8	5	15.8	17.3	10.1
La Crosse, Wisc.....	12.4	5	17.4	19.4	10.2
Minneapolis, Minn..	12.4	4	16.4	18.4	10.2
Duluth, Minn.....	12.8	4	16.8	18.8	10.6

Above prices include these inspection fees on both gasoline and kerosine, per gallon, figured on basis of 50 gallons per barrel:

Alabama, 1/40c on gasoline, 1/2c on kerosine; Arkansas, 1/5c per gal. in a single barrel, 1/20c per gal. in bulk; Florida, 1/8c; Illinois, 3/100c; Indiana, 1/2c per gal. in a single barrel; 3/10c per gal. in lots of 2 to 10 bbls., 1/5c for 10 to 50 bbls., 2/25c for over 50 bbls; Kansas, 1/50c, (3/50c can be charged to meet inspection department expenses); Louisiana, 1/32c; Minnesota, 1/25c; Missouri, 3/100c; Nebraska, 3/100c; Nevada, gasoline 1/20c; North Carolina, 1/4c; North Dakota, 1/20c; Oklahoma, 2/25c per gal. in lots of more than 50 bbls., 1/5c in lots less than 50 bbls.; South Carolina, 1/8c; South Dakota, 1/10c; Tennessee, 2/5c; and Wisconsin, 1/25c.

Kerosine inspection fee only: Iowa, 2/25c; Michigan, 4/5c per gal for first 2 bbls.; 3/5c for next 3; 2/5c for next 5; 3/10c for next 15, and 1/5c per gal. in lots over 25 bbls.

TANK WAGON, SERVICE STATION MARKETS

Tax column includes 1c federal tax, state gasoline tax, also city and county taxes as indicated in footnotes, and inspection fees, as shown in general footnote. These prices in effect March 23, 1936, as posted by principal marketing companies at their headquarters offices, but subject to later corrections

S. O. Indiana—Cont'd

Standard Red Crown Gasoline

	T.W.	Taxes	Total T.W.	S.S.	Kerosine T.W.
Mankato, Minn.	12.4	4	16.4	18.4	10.2
Des Moines, Iowa	11.8	4	15.8**18.8		9.6
Sioux City, Iowa	12	4	16	**18	9.8
Davenport, Iowa	12	4	16	**18	9.8
Mason City, Iowa	12.2	4	16.2**18.2		10
St. Louis, Mo.	11.7	†4	15.7	17.7	9.5
Kansas City, Mo.	11.4	†4	15.4	17.4	9.2
St. Joseph, Mo.	11.4	†4	15.4	17.4	9.2
Fargo, N. D.	13.4	4	17.4	19.4	11.2
Minot, N. Dak.	14.6	4	18.6	20.6	12.4
Huron, S. Dak.	12.9	*5	17.9	19.9	10.7
Wichita, Kans.	10.9	4	14.9	16.9	6.8

Note: Kerosine s.s. prices are generally 3c above normal t.w. price.

Stanolind Gasoline (Third Grade)

Stanolind normal prices are 1c under normal Red Crown prices, thru territory. Among subnormal points are the following:

Decatur, Ill.	11	4	15	16.5	....
Evansville, Ind.	11.7	*5	16.7	18.2	....
Indianapolis, Ind.	11.9	*5	16.9	18.4	....
Des Moines, Iowa	9.1	4	13.1**17.8		....
St. Louis, Mo.	10.7	†4	14.7	14.7	....
Detroit, Mich.	8.5	4	12.5	14.5	....
Milwaukee, Wis.	9.8	5	14.8	16.3	....
Huron, S. D.	11.9	*5	16.9	18.9	....
Wichita, Kans.	8	4	12	14.4	....
Minneapolis, Minn.	11.4	4	15.4	15.4	....

†St. Louis, Kansas City and St. Joseph prices include 1c city tax. ‡Includes 4c state tax.

*South Dakota gasoline and kerosine prices include 0.1c for sales tax. Indiana t.w. and s.s. gasoline prices include 0.2c for chain store tax.

**Service station prices for gasoline at Iowa points represent the opinion of National Petroleum News as to prices prevailing at the majority of stations.

Discounts to dealers: Effective Dec. 1, 1934, thru territory, except Michigan effective Apr. 1, 1935, and except Chicago division and Iowa, maximum discounts to controlled and uncontrolled undivided gasoline accounts, off s.s. price at normal points: Ethyl and Red Crown gasoline, 3.5c; Stanolind 2.5c; in Chicago, effective July 1, 1935, Ethyl and Red Crown, 4c; Stanolind, 3c. Divided gasoline accounts thru territory, get 0.5c less per gallon. In case of lease and agency and AAA accounts, the above discounts include the 0.5c per gal. rental allowance. In Iowa, normal dealer prices are 1.5c below normal t.w. price for first and second grade gasolines, and 0.5c under normal t.w. for third grade.

Discounts to commercial consumers: Effective Jan. 1, 1935, thru territory, except Michigan effective Feb. 1, on purchases per month, discount off t.w. price; all gasolines, 25 to 1,000 gals., at at t.w. price; 1,000 gals. or more, 1.5c off t.w. on Ethyl and Red Crown, and 0.5c on Stanolind. Purchases of less than 25 gals. get regular s.s. price.

S. O. Nebraska

Standard Red Crown Gasoline

Omaha, Neb.	12.4	6	18.4	20.4	10.1
McCook, Neb.	13.1	6	19.1	21.1	9.8
Norfolk, Neb.	12.8	6	18.8	20.8	10.5
North Platte, Neb.	13.2	6	19.2	21.2	10.9
Scottsbluff, Neb.	13.9	6	19.9	21.9	11.6

Reliance Gasoline (Third Grade)

Omaha, Neb.	11	6	17	17	....
McCook, Neb.	11.6	6	17.6	18	....
Norfolk, Neb.	11.8	6	17.8	19.8	....
North Platte, Neb.	12.2	6	18.2	20.2	....
Scottsbluff, Neb.	12.9	6	18.9	20.9	....

Discount to dealers: where service station gasoline prices are normal, resellers' allowance off service station prices are (*Maximum* over-all, including rent) as follows: Reliance, 2½c; Standard Red Crown, and Solite with Ethyl, 3½c. Where service station gasoline prices are below normal, resellers' allowances are reduced one-half of the amount below normal, down to the following (*Minimum* over-all including rent): Reliance, 2c, Standard Red Crown and Solite with Ethyl, 3c.

Discounts to consumers: for tank wagon deliveries covered only by Standard Commercial Consumer Contract, effective January 1, 1935.

S. O. Louisiana

Essolene

	Consumer Tank Car	Dealer T.W.	Taxes	Posted S.S.	Kerosine T.W.
Little Rock, Ark.	8	10.5	7.5	21.5	11.5
Alexandria, La.	8	10.5	*8	22	*10.5
Baton Rouge, La.	8	10.5	*7	21	*11.5

S. O. Louisiana—Cont'd

	Consumer Tank Car	Dealer T.W.	Taxes	Posted S.S.	Kerosine T.W.
New Orleans, La.	7.25	9.5	*9	22	*12
Lake Charles, La.	8.5	11	*8	22.5	10
Shreveport, La.	7.5	10	*7	20.5	*9
Lafayette, La.	8.5	11	*8	22.5	12.5
Bristol, Tenn.	9.5	10.75	8	21.5	14.5
Chattanooga, Tenn.	10	12.5	8	24	11.5
Knoxville, Tenn.	10.5	13	8	24.5	14
Memphis, Tenn.	8.5	11	8	22.5	9.5
Nashville, Tenn.	9.5	12	8	23.5	10

*Baton Rouge and Shreveport gasoline tax includes 5c state tax, 1c federal tax, and 1c parish tax. Alexander, Lake Charles and Lafayette, 2c parish tax. New Orleans, 3c parish tax. Louisiana kerosine prices include 1c state tax.

Price basis to dealers: Undivided dealers get dealer price, less 0.5c.

Price basis to commercial consumers: Effective Feb. 11, 1935, commercial consumers not under contract will be billed at 2.5c per gal. above posted bulk plant tank car price at time and place of delivery in lots of 50 gals. or more at one time. Contract customers will be billed at following differentials over tank car price, on yearly purchases: up to 35,999 gals., 2.5c over tank car price; 36,000 to 119,999 gals., 2c over; 120,000 to 239,999 gals., 1.5c; 240,000 to 479,999 gals., 1c; 480,000 gals. and over, 0.5c.

On single deliveries to all classes of commercial consumers, of less than 50 gals., s.s. price at time and place of delivery applies.

Magnolia Petroleum

Mobilgas

	T.W.	Taxes	Total T.W.	S.S.	Kerosine T.W.
Muskogee, Okla.	10	5	15	19	8
Oklahoma City	10	5	15	19	8
Tulsa, Okla.	10	5	15	19	8
Fort Smith, Ark.	10.5	5	15.5	19	8
Little Rock, Ark.	10.5	7.5	18	21.5	9.5
Texarkana, Ark.	9.5	5	14.5	18.5	8.5
Dallas, Tex.	8.5	5	13.5	17	8.5
Ft. Worth, Tex.	8.5	5	13.5	17	8.5
Houston, Tex.	9	5	14	18	8.5
San Antonio, Tex.	9	5	14	18	8.5
El Paso, Tex.	11	5	16	20	10
Roswell, N. M.	11.5	††6.5	18	22	10
Santa Fe, N. M.	12.5	**7	19.5	23.5	12

Metro Gasoline (Third Grade)

Muskogee, Okla.	9	5	14	17	....
Oklahoma City	8.5	5	13.5	16	....
Tulsa, Okla.	9	5	14	17	....
Fort Smith, Ark.	10.5	5	15.5	15.5	....
Little Rock, Ark.	10.5	7.5	18	18.5	....
Texarkana, Ark.	7.5	5	12.5	15.5	....
Dallas, Tex.	6	5	11	13	....
Ft. Worth, Tex.	7	5	12	14	....
Houston, Tex.	7.5	5	12.5	15	....
San Antonio, Tex.	7.5	5	12.5	15	....
El Paso, Tex.	9	5	14	17	....
Roswell, N. M.	8	††6.5	14.5	17.5	....
Santa Fe, N. M.	11.5	**7	18.5	21.5	....

*In Texarkana, 4c Texas tax applies; outside Texarkana, 6.5c Arkansas tax applies.

†In Fort Smith, 4c Oklahoma tax applies outside Fort Smith, 6.5c Arkansas tax applies.

**Includes 1c city tax.

††Includes 0.5c city tax.

Note: *Price basis to dealers* off s.s. price in t.w., bulk or bbl. deliveries, on Mobilgas and Ethyl, normally: to 100% dealers, 4c; to divided dealers, 3.5c. On Metro gasoline in Texas, Oklahoma and New Mexico: to 100% dealers, 3c; to divided dealers, 2.5c. On Metro, in Arkansas and Louisiana: to 100% dealers, 3.25c.

Price basis to consumers: Thru Texas, effective Jan. 1, 1936, New Mexico, effective Jan. 18, and Oklahoma, effective Feb. 20, all grades of gasoline invoiced on the same graduated scale as now allowed 100% dealers, which see in above paragraph. Thru Arkansas and Louisiana, all grades gasoline invoiced at consumer's t.w. price, which on Mobilgas and Ethyl, normally is 3.5c less than s.s. price, less following contract quantity discounts at end of month, on all three grades, on monthly purchases: 3,001 to 10,000 gals., 0.5c; 10,001 to 20,000 gals., 1c; 20,001 to 40,000 gals., 1.5c; and 40,001 gals. and over, 2c. Metro invoiced at same price as Mobilgas.

Continental Oil

Conoco Bronze Gasoline

Denver, Colo.	12	5	17	19	11
Pueblo, Colo.	14	5	19	21	13
Grand Junction, Col.	16	5	21.5	23.5	15

Continental Oil—Cont'd

Conoco Bronze Gasoline

	T.W.	Saxes	Total T.W.	S.S.	Kerosine T.W.
Casper, Wyo.	14.5	5	19.5	21.5	11.5
Cheyenne, Wyo.	14.5	5	19.5	21.5	13
Billings, Mont.	14.5	6	20.5	22.5	16.5
Butte, Mont.	16	6	22	24	17.5
Great Falls, Mont.	15.5	6	21.5	23.5	17.5
Helena, Mont.	16.5	6	22.5	24.5	17.5
Salt Lake City, Utah.	16	5	21	23	16
Boise, Ida.	16.5	6	22.5	24.5	18
Twin Falls, Ida.	17	6	23	25	18
Albuquerque, N.M.	14.5	†6.5	21	23	13

Demand (Third Grade)

Denver, Colo.	10	5	15	17	....
Cheyenne, Wyo.	12.5	5	17.5	19.5	....
Helena, Mont.	14.5	6	20.5	22.5	....
Salt Lake City, Utah.	14	5	19	21	....
Boise, Ida.	14.5	6	20.5	22.5	....
Albuquerque, N. M.	12.5	†6.5	19	21	....

†Includes city tax of 0.5c.

Discounts: effective March 1, 1934, on gasolines thru territory, off s.s. price: to "undivided" dealers: Ethyl and Conoco Bronze, 4c; Demand, 3c; to "divided" dealers: Ethyl and Conoco Bronze, 3.5c; Demand, 2.5c.

S. O. California

Standard Gasoline

San Francisco, Cal.	8.5	4	12.5	13.5	11.5
Los Angeles, Cal.	8.5	4	12.5	13.5	10.5
Fresno, Cal.	9	4	13	14	9
Phoenix, Ariz.	10.5	6	16.5	17.5	†16
Reno, Nev.	10	5	15	16	13
Portland, Ore.	9	6	15	16	13.5
Seattle, Wash.	9	6	15	16	13.5
Spokane, Wash.	12	6	18	19	16.5
Tacoma, Wash.	9	6	15	16	13.5

Flight Gasoline (Third Grade)

San Francisco, Cal.	7	4	11	12	....
Los Angeles, Cal.	6.5	4	10.5	11.5	....
Fresno, Cal.	7.5	4	11.5	12.5	....
Reno, Nev.	8.5	5	13.5	14.5	....
Phoenix, Ariz.	9	6	15	16	....
Portland, Ore.	7.5	6	13.5	14.5	....
Seattle, Wash.	7.5	6	13.5	14.5	....
Spokane, Wash.	10.5	6	16.5	17.5	....
Tacoma, Wash.	7.5	6	13.5	14.5	....

†Includes 5c state tax.

Discounts to dealers: on gasoline: on Stanavo Aviation, Standard Ethyl, and Standard gasolines, to 100% dealers, 4c below t.w. price; on Flight, 3c per gal. below t.w. To "split" dealers, all brands gasoline 3c below t.w.

Effective September 24, 1935, to commercial consumers, off t.w.: advance quantity discount from above prices extended at time of delivery, on Stanavo Aviation, Standard Ethyl and Standard gasolines, 2c per gal.; Flight, 1c.

On kerosine: tank car delivery, 3.5c off t.w. price to all classes of trade; transport truck and trailer deliveries, 3.5c below t.w. to resellers; plant deliveries to jobbers, 3c below t.w.

Canada

Prices of Imperial Oil Ltd.

Per Imperial Gallon, which is 1.2 U. S. Gallons

Imperial Three Star Gasoline

	T.W.	Taxes	Total T.W.	S.S.	Kerosine T.W.
Hamilton, Ont.	15	6	21	23.5	17
Toronto, Ont.	15	6	21	23.5	17
Brandon, Man.	23.8	7	30.8	33.8	22.3
Winnipeg, Man.	22.2	7	29.2	32.2	20.7
Regina, Sask.	23.5	7	30.5	33.5	22
Saskatoon, Sask.	26.3	7	33.3	36.3	24.8
Edmonton, Alta.	25.7	7	32.7	35.7	24.2
Calgary, Alta.	23	7	30	33	21.5
Vancouver, B. C.	19	7	26	29	24
Montreal, Que.	13.5	6	19.5	22	17.5
St. John, N. B.	17	8	25	29	19.5
Halifax, N. S.	17	8	25	29	19.5

Discounts to Dealers:

Maritime Provinces, 4c per gallon off s.s. price to all classes of dealers. Quebec, except Montreal City, Prairie Provinces and British Columbia, 3c to divided dealers, 4c to undivided dealers. Ontario and Montreal City, 2½c to divided dealers, 3½c to undivided dealers.

TANK WAGON, SERVICE STATION MARKETS

Tax column includes 1c federal tax, state gasoline tax, also city and county taxes as indicated in footnotes, and inspection fees, as shown in general footnote. These prices in effect March 23, 1936, as posted by principal marketing companies at their headquarters offices, but subject to later corrections

Aviation Gasoline

Following are tank car and/or tank wagon prices of aviation gasoline in principal marketing territories (Stanavo aviation in all territories except Continental Oil and Magnolia Pet. Co.) Tax column includes 1c federal tax, and state tax; also municipal taxes as indicated in footnotes.

Effective March 23, 1936

S. O. New Jersey

	Tank Car	T.W.
Bayonne, N. J.	10	12
Baltimore, Md.	10	12
Washington, D. C.	....	12.6
Richmond, Va.	....	13.5

S. O. New Jersey (Continued)

	T.W.
Greensboro, N. C.	14.9
Raleigh, N. C.	14.6
Charleston, W. Va.	14.2

Colonial Beacon Oil Co.

	T.W.
Brooklyn, N. Y.	12.8
Buffalo, N. Y.	13.7
Boston, Mass.	14

S. O. Pennsylvania

Philadelphia, Pa.	14.1
Pittsburgh, Pa.	14.9

S. O. Louisiana

New Orleans, La.	12.3
Shreveport, La.	12.6

Prices in above four territories do not include state or federal taxes. They are for 73 octane grade aviation gasoline. An 80 octane product generally brings 0.5c premium and an 87 octane product, 1.5c premium over the 73 octane grade.

Note: S.s. prices in above four territories are generally 6c over t.w. prices. Above t.w. prices are net, with no discounts allowed for quantity purchases. T.w. prices are generally tank car price, plus freight, plus 2.5c per gal.

S. O. Ohio

	T.W.	Tax	Total T.W.
Thru Ohio: (To Commercial Consumers) Stanavo Ethyl Aviation (73 Octane)	15.5	5	20.5

Discounts: For delivery on contract to hangar operators and resellers: 2c below commercial consumer posted t.w. price

S. O. Indiana

Chicago, Ill.	15	4	19
Indianapolis, Ind.	15.9	5	20.9
Detroit, Mich.	16.5	4	20.5
Milwaukee, Wisc.	15.3	5	20.3
Minneapolis, Minn.	15.4	4	19.4
St. Louis, Mo.	13.7	*4	17.7
Kansas City, Mo.	14.4	*4	18.4
Fargo, N. D.	16.4	4	20.4
Huron, S. D.	15.9	5	20.9
Wichita, Kans.	13.9	4	17.9

*Includes 1c city tax.
**Includes 0.1c to cover sales tax.

Magnolia Petroleum

Dallas, Tex.	11.5	5	16.5

Humble Oil & Refining Co.

	Tank Car
Baytown, Tex. (exclusive of taxes)	8.5

Continental Oil Co.

	T.W.	Tax	Total T.W.
Denver, Colo.	15	5	20
Cheyenne, Wyo.	17.5	5	22.5
Helena, Mont.	21.5	6	27.5
Salt Lake City, Utah	19	5	24
Albuquerque, N. M.	17.5	*6.5	24

*Includes city tax of 0.5c.

S. O. California

Phoenix, Ariz.	14	6	20
Los Angeles, Cal.	11.5	4	15.5
San Francisco, Cal.	12	4	16
Reno, Nev.	14	5	19
Portland, Ore.	12.5	6	18.5
Seattle, Wash.	12.5	6	18.5
Spokane, Wash.	15.5	6	21.5

Note: For discounts, etc., see note under Standard and Flight gasoline above.

Naphtha

In Effect March 23, 1936

(In Tank Wagon or Steel Barrels; in Cents per Gallon)

	Mineral Spirits	V.M.&P. Naphtha	Light Cleaner Naphtha	*Solvent
Altoona, Pa.	....	....	....	17
Baltimore (net)	11	....	....	11
Boston (net)	12	13.5	13.5	12
Bridgeport	....	....	....	13.5
Buffalo (net)	....	....	....	14
Chicago	16.2	16.5	15.5	15.5
Detroit	†17.9	†19	....	†19
Kansas City	13.9	14.9	14.9	13.9
Lancaster, Pa.	....	....	....	17
Milwaukee	18.8	†19.8	19.8	18.8
Minneapolis	†17.9	†18.9	†18.9	†17.5
Newark (net)	13	....	....	13
†New York	11	12	12	11
Philadelphia (net)	11.5	13	13	11.5
Providence (net)	11	11	....	11
Rochester (net)	‡12	....	....	‡12
St. Louis	14.2	15.2	15.2	13.5
Syracuse	....	....	....	14

Naphtha (*In Tank Cars*)

In Tank Cars (F.o.b. refinery or seaboard terminal)

	V.M. & P. Naphtha	Solvent
Baltimore	10	9.5
New York Harbor	10	9.5
Philadelphia district	10	9.5
Providence	10	9.5

Note: 2c off above t.w. prices to large buyers in some instances.

*In the East, prices apply on product generally known as Mineral Spirits; in the middlewest, prices apply on Stanosol (S.O. Indiana grade of Stoddard Solvent).

†At the following points, these taxes and/or discounts apply on the products specified: Detroit, first three products include 3c state tax, prices applying on 150 gals. or more, with prices 1c higher for less than 150 gals.; Milwaukee, V.M. & P. price includes 4c state tax; Minneapolis, first 3 products include 3c state tax; price for solvent for less than 100 gals. is 1c higher; at New York, prices on all four grades, 0.5c discount for 20,000 gals. or more yearly.

‡Purchases of at least 150 gallons.

Latest Changes

From Mar. 17 to Mar. 23 inclusive. Dates and amounts of changes shown. See table for full current prices. Changes are on gasoline unless kerosine is indicated.

S. O. New York—Socony Mobilgas:

Boston, Providence, Concord and Manchester, up 0.5c, March 19.

Lancaster, cut 0.5c, March 19.

Atlantic Refining—White Flash Plus:

Dover and Wilmington, Del., s.s. cut 2c, March 19.

Boston and Worcester, up 0.5c, March 19.

Fall River, t.w. cut 0.75c, s.s. up 0.5c, March 19.

Providence, up 0.5c, March 19.

S. O. Ohio—X-70 and Renown:

Butler County, t.w. up 1c, s.s. up 2c, March 21.

S. O. Kentucky—Crown:

Lexington, cut 1c, March 16.

Paducah, t.w. cut 1c, s.s. cut 2c, March 11.

Kyso:

Lexington, cut 1.5c, March 16.

Paducah, t.w. cut 1c, s.s. cut 2c, March 11.

Magnolia Petroleum—Mobilgas:

Houston and San Antonio, cut 1c, March 19.

Metro:

Dallas, cut 1c, March 19.

Houston and San Antonio, t.w. cut 0.5c, s.s. cut 1c, March 19.

Kerosine:

Thru Texas, up 0.5c, March 20, except El Paso unchanged.

Muskogee, up 1c, March 23.

Texarkana, up 0.5c, March 20.

Continental Oil—Conoco Bronze, Demand and Aviation:

Denver, cut 2c, March 17.

Corrections

Notation of amount of change and dates not previously shown in table. Table in this issue is corrected to show these changes. Changes are on gasoline unless kerosine is indicated.

S. O. New York—Socony Mobilgas:

Plattsburg, cut 2c, March 3.

Concord and Manchester, t.w. cut 0.5c, Jan. 21.

Boston, s.s. cut of 1c, reported on page 55 of Jan. 29, issue never went into effect, correct price was 16c including tax.

Kerosine:

Jamestown, up 0.25c, Feb. 5.

Bangor, cut 0.5c, March 5.

Atlantic Refining—White Flash Plus:

Scranton, cut 0.75c, Feb. 25.

New Haven, t.w. cut 1.5c, s.s. cut 0.5c, Feb. 21.

Brunswick, up 0.5c, Feb. 25.

S. O. Kentucky—Kyso:

Mobile, t.w. up 1.5c, s.s. up 2c, March 3.

Kerosine:

Mobile, cut 1c, March 10.

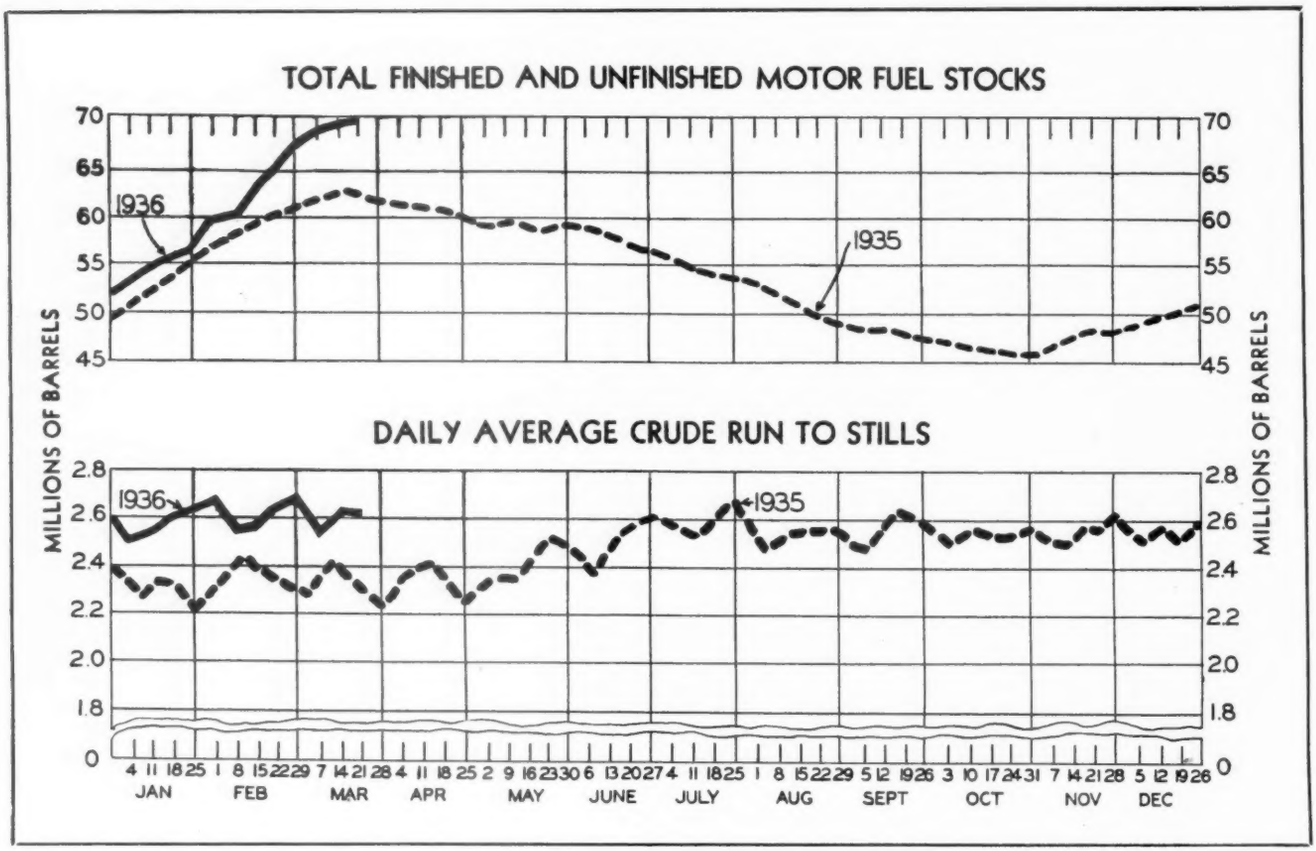
S. O. Indiana—Kerosine:

St. Joseph, up 1c, March 16 instead of 0.8c as reported on page 63, March 18 issue. Correct price is 9.2c.

S. O. Louisiana—Essolene:

New Orleans, dealer t.w. and s.s. up 0.5c, March 10.

U. S. Crude Runs and Gasoline Stocks as Reported Weekly by A. P. I.



Motor Fuel Stocks Increase 435,000 Barrels

(By Teletype)
NEW YORK, March 24

LESS than a half-million-barrel increase in motor fuel stocks was reported for the week ended March 21, when total stocks stood at 69,592,000 barrels, according to the American Petroleum Institute. This indicates an increase of 435,000 barrels over the week ended March 14.

Crude runs to refinery stills, which had gained 90,000 barrels the previous week, declined 1000 barrels the past week, to 2,618,000 barrels daily average. This is at 89.6 per cent of the country's plants, operating at 75.5 per cent capacity.

Eastern district plants reduced their runs by 45,000 barrels, with East Coast plants reporting a decline of 23,000 barrels. Oklahoma-Kansas-Missouri plants increased runs 17,000 barrels and Texas Gulf 36,000 barrels. Other districts ran less crude to stills than the previous week, with the exception of North Louisiana-Arkansas where runs increased 6000 barrels.

Refinery stocks of motor fuel totaled 43,846,000 barrels on March 21, an increase of 263,000 barrels over the previous week.

Among the districts reporting increases, the East Coast district showed the highest gain in motor fuel stocks. Stocks there gained 600,000 barrels, to 18,773,000 barrels. Stocks at the Texas Gulf increased 120,000 barrels. California stocks declined 245,000 barrels, Indiana - Illinois - Kentucky stocks declined 179,000 barrels, and Oklahoma-Kansas 123,000 barrels.

CURRENT REFINERY OPERATIONS

Districts	Per Cent Capacity Reporting	Daily Average Crude to Stills (Barrels) Week Ended		Per Cent of Reporting Capacity Operated Week Ended		Stocks (Thousands of Barrels) Total Finished and Unfinished Motor Fuel*		Total Finished Gas & Fuel Oil		Cracked Gasoline Production % Total Capacity Reporting	Daily Av. Production (Barrels) Week Ended	
		Mar. 21	Mar. 14	Mar. 21	Mar. 14	Mar. 21	Mar. 14	Mar. 21	Mar. 14		Mar. 21	Mar. 14
East Coast	100.0	471,000	494,000	77.0	80.7	18,773	18,172	6,010	6,320	100.0	97,000	106,000
Appalachian	94.8	94,000	110,000	64.4	75.3	2,996	2,905	578	675	98.7	19,000	24,000
Ind., Ill., Ky.	95.9	376,000	382,000	88.7	90.1	11,396	11,484	2,804	2,732	99.7	96,000	107,000
Okla., Kans., Mo.	84.8	263,000	246,000	68.5	64.1	7,838	7,961	2,500	2,440	89.1	63,000	55,000
Inland Texas	48.5	90,000	91,000	56.3	56.9	1,914	1,927	1,409	1,416	70.9	20,000	24,000
Texas Gulf	96.8	607,000	571,000	92.2	86.8	9,560	9,440	6,490	6,424	98.5	125,000	128,000
La. Gulf	96.4	121,000	130,000	74.2	79.8	1,891	1,849	2,267	2,473	96.1	22,000	23,000
No. La., Ark.	90.0	43,000	37,000	59.7	51.4	394	400	389	410	95.7	9,000	10,000
Rocky Mt.	61.9	41,000	43,000	68.3	71.7	1,703	1,647	693	704	84.8	10,000	13,000
California	92.6	512,000	515,000	64.9	65.3	13,127	13,372	70,605	70,635	100.0	59,000	65,000
Total Reporting	89.6	2,618,000	2,619,000	75.5	75.5	69,592	69,157	93,745	94,229	95.9	520,000	555,000
Estimated U. S. Total (Bur. of Mines Basis.)		2,815,000	2,815,000			73,157	72,722	95,378	95,862		555,000	590,000

*Includes stocks at refineries, in bulk terminals, pipe lines and in transit.

LIGHT FUEL *Demand* LOWER

HEAVY industrial fuels again featured fuel oil markets as demand for the lighter grades continued to taper off. Demand for heavy fuels remained steady as industrial operations continued to point higher.

With the exception of No. 1 oil, the lighter grades were inclined to be easy and lower prices were recorded in some districts. The No. 1 oil remained firm more from the lack of offerings than from demand. Many refiners have switched production from the No. 1 oil to kerosine in anticipation of a heavy demand for the latter oil when the plowing season gets under way.

Industrial operations were given a temporary set-back in some areas where floods were rampant, but generally speaking the demand for heavy fuels from industrial plants was well maintained.

* * *

TULSA, March 21.—Light fuel oils in the Mid-Continent were beginning to reflect the seasonal decline in consumption of heating oil. This especially was true of the lower gravity oils and off-specification products.

Price recessions of 0.125-cent were reported in several districts for No. 2 oil. Some inquiries were received by suppliers, but in most cases buyers desired a product with unusually high specifications. As a result, ordinary dark color No. 2 oil was sluggish. As the week ended even the light colored oils began to edge off.

Zero cold test 28-30 gravity fuel oil has eased considerably. While this product was not freely offered, small lots could be purchased in Oklahoma at 0.125-cent under last week's levels.

No. 1 prime white oil continued steady despite the easiness in other light fuels. East Texas No. 1 oil advanced 0.125-cent. This was due mostly to scarcity and not to increased demand.

Mid-Continent refiners reported almost without exception that heavy railroad fuel was moving briskly. Prices were steady.

* * *

NEW YORK, March 21.—Tank car and barge markets for light fuel oils at eastern seaboard terminals were showing the effects of warmer weather throughout most of the eastern marketing area and movement has slowed down considerably. Demand for Nos. 2 and 4 oils was reported slack at most points, particularly in the Philadelphia and Baltimore districts. Demand continued fairly active in parts of New England and western New York.

Prices were beginning to ease, although as yet no pronounced break has been noted. Some reports of price shading in Nos. 2 and 4 oils was heard, but suppliers generally said that they had not yet been forced to make reductions.

Movement of heavy fuel remained active, according to most suppliers, and stocks of this product were not heavy. No changes were reported in prices.

CHICAGO, March 21.—The extreme sides of the Mid-Western fuel oil market presented a bright picture, with grades in between No. 1 and No. 6 in the doldrums.

Demand for good grades of distillate for tractor fuel seems to have taken up where the call for this oil from home users has left off.

Throughout the week resellers reported it was virtually impossible to obtain any appreciable quantity of No. 1 prime white fuel. It was indicated that little No. 1 was being made at present, refiners preferring to cut kerosine.

Heavy industrial fuel was in steady demand. Stocks remained in good shape.

Nos. 2, 3, 4 and 5 oils were spotty. Several sellers have announced price reductions, with others indicating they would not hesitate to accept business at lower prices.

FUEL OILS

Following are tank wagon prices of various grades of heating oil at the points shown in various territories. Prices are in cents per gallon.

Prices in Effect March 23, 1936

	No. 1	No. 2	No. 3	No. 4
S. O. New Jersey				
Newark, N. J.	7.5	6.75	6.75	6.75
Atlantic City, N. J.	8	7	7	6.5
Baltimore, Md.	7.5	5.5	5.5	5
Washington, D. C.	8.25	7	7	7
Socony-Vacuum Oil Co., Inc. (S. O. New York Division)				
New York City	7.25	7.00	7.00	6.50
Albany, N. Y.	7.75	7.25	7.25	6.75
Rochester, N. Y.	8.25	7.50	7.50	7.50
Boston, Mass.	7.25	6.75	6.75	6.75
Bangor, Me.	8	7.00	7.00	7.00
Manchester, N. H.	8	7.25	7.25	7.25
Burlington, Vt.	8.75	7.75	7.75	7.75
New Haven, Conn.	7	6.25	6.25	6.25
Providence, R. I.	7.25	6.75	6.75	6.25
Atlantic Refining				
Philadelphia, Pa.	7.50	6.25	6.25	5.75
Allentown, Pa.	8	6.75	6.75	6.75
Wilmington, Del.	7.50	6.25	6.25	5.75
Springfield, Mass.	7.50	7	..	7
Worcester, Mass.	7.75	7.25	....	7.25
Hartford, Conn.	7	7	....	7
S. O. Ohio				
Ohio Statewide	8	7.75	7.50	7.25

Note: S. O. Ohio prices are for hose dumps; bucket dumps are 0.5c per gallon higher.

S. O. Indiana

Stanolex Fuel Oil

	No. 1	No. 3
Chicago	7.25	6.5
Indianapolis	*11.7	*11.2
Detroit	6.8	6.8
Milwaukee	8	7
Minneapolis	8.2	7.2
Sioux City	8.8	6.4
St. Louis	7.2	6.5
Kansas City	6.6	5.5

*Includes state tax of 4c.

Note: Small-lot deliveries of light fuel oils range from 0.5c to 1.5c higher than above quotations.

S. O. Indiana Announces New Tractor Fuel

CHICAGO, March 21.—Standard Oil Co. of Indiana has begun the sale of a special grade of tractor fuel in its marketing territory. Previously the company has sold No. 1 fuel oil for both heating and tractor operation.

Normal price of Standard Tractor Fuel will be 0.5 cent per gallon lower than No. 1 furnace oil. No quantity discount will be allowed, however.

It is expected that this announcement by the leading marketer in the middle west would bring some semblance of order into the tractor fuel market. Heretofore, it was the not uncommon rule to sell as tractor fuel products ranging from off-specification No. 1 oil, almost all the way up to a third grade gasoline.

Many confidently expect that when the specifications adopted by the Indiana company for its tractor fuel become known the trade will attempt to standardize on a similar product.

An analysis of Stanolex No. 1 fuel as reported last year shows the following specifications:

Gravity	38.4
Flash	160°F (open cup)
Fire	180°F
Initial	358°
10 per cent	386°
50 per cent	421°
95 per cent	478°
End Point	500°
Color	about No. 16
Recovery	99 per cent

A comparison of the No. 1 fuel specified above with federal exemption laws shows that a lowering of the flash point could be made (federal requirements are over 110°F closed cup), and the 95 per cent point could be dropped to not under 464°F.

Illinois exemption laws are virtually identical with federal requirements. North Dakota specifies, for a tax exempt fuel, an initial boiling point not lower than 225°F, with the 95 per cent point not less than 464°F.

Observers also were considering the possible effect the new tractor fuel would have on the tank wagon kerosine market. For this reason traders were especially interested in knowing specifications of the new commodity. If the new tractor fuel is an improved No. 1 oil many fear that buyers ordinarily using kerosine may switch to the new fuel because of price.

SEABOARD MARKETS, EXPORT AND COASTWISE

Prices do not include Federal tax. Where $ mark is shown, prices are per barrel of 42 U. S. gallons

Eastern Domestic

(Prices in cents per gallon tank car lots, unless otherwise noted, f.o.b. refinery or seaboard terminal, representing majority of sales and quotations to jobbers and/or consumers. Florida and S. Carolina inspection tax not included.)

*Motor Gasoline

Prices March 23	60-64 Octane	65 Octane and Above
New York harbor	7.00	7.25
New York harbor, barges	6.75	7.00
Philadelphia district	6.75 – 7.00	7.00 – 7.25
Baltimore district	6.75	7.00
Norfolk district	6.75	7.00
Wilmington, N. C. district	6.75	7.00
Charleston, S. C., district	6.75	7.00
Savannah district	6.75	7.00 – 7.25
Jacksonville district	6.75	7.00 – 7.25
Portland district	7.25	7.50
Boston district	7.00	7.25
Boston district, barges	6.75	7.00
Providence district	7.00	7.25
Providence district, barges	6.75	7.00

*Due to lack of companies offering U. S. Motor gasoline, 59 octane and below in the open market, prices for this grade are discontinued. Quotations nominally are 0.25c below those for 60-64 octane grade.

Water White Kerosine

Prices March 23			
New York harbor	4.875– 5.25	Savannah district	5.50 – 5.75
N. Y. harbor, barges	4.75 – 5.125	Jacksonville district	5.50 – 5.75
Philadelphia district	5.25 – 5.50	Portland district	5.50
Baltimore district	5.50	Boston district	5.125– 5.25
Norfolk district	5.50	Boston dist., barges	5.00 – 5.125
Wilmington, N. C.	5.50	Providence district	5.25
Charleston, S.C., dist.	5.50	Providence, barges	5.125

*Fuel Oils

Prices March 23	New York harbor	New York harbor, barges	Philadelphia district
No. 1	4.875– 5.25	4.75 – 5.125	5.25 – 5.50
No. 2	4.625– 4.75	4.50 – 4.625	4.75
No. 3	4.625– 4.75	4.50 – 4.625	4.75
No. 4	4.25 – 4.50	4.125– 4.375	4.25
No. 5 (per barrel)	$1.25	.....	$1.25
No. 6 (per barrel)	$1.05	.....	$1.05

	Baltimore district	Boston district
No. 1	5.50	5.125– 5.25
No. 2	4.75	4.75
No. 3	4.75	4.75
No. 4	4.375	4.50
No. 5 (per barrel)	$1.25	$1.25
No. 6 (per barrel)	$1.05	$1.05

	Boston dist., barges	Providence district	Providence dist., barges
No. 1	5.00 – 5.125	5.25	5.125
No. 2	4.625	4.75	4.625
No. 3	4.625	4.75	4.625
No. 4	4.375	4.50	4.375

*Fuel oils meet specifications of U. S. Commercial Standards CS12-35.

	Bunker Oil Grade C Per Barrel	Diesel Oil Ships' Bunkers Per Barrel	Gas Oil 28-34 Gravity Per gallon	Diesel Oil Shore Plants Per gallon
New York harbor	*$1.05	*$1.65	4.75	4.75
Philadelphia dist.	*$1.05	*$1.65	4.75	....
Baltimore district	*$1.05	*$1.65	4.75	....
Norfolk district	*$1.05	*$1.65	4.75	....
Charleston district	$1.00	$1.65	....	....
Savannah district	$1.00	$1.89	....	4.75
Jacksonville dist.	$1.00	$1.995	....	4.75
Tampa district	$1.00	$1.995	....	....
Portland district	$1.15	$1.75	....	....
Boston district	$1.05	*$1.65	....	....
Providence district	$1.05	$1.65	....	....

*Lighterage for bunker oil, 5c per bbl. additional; for Diesel oil, 6.5c per bbl. additional.

Pacific Export

(Quotations are at seaboard, Los Angeles, in cargo lots, cents per gallon, except where otherwise noted.)

Prices—	March 23	March 16	March 9
53-55 U. S. Motor	4.75 – 5.25	4.75 – 5.25	4.75 – 5.25
400 e.p. blend 65 Octane and above	5.00 – 6.00	5.00 – 6.00	5.00 – 6.00
38-40 w.w. kerosine, 150 fire point	4.25 – 5.00	4.25 – 5.00	4.25 – 5.00
41-43 w.w. kerosine	4.50 – 5.00	4.50 – 5.00	4.50 – 5.00
44 water white kerosine	5.00	5.00	5.00
Prime wh. kerosine	3.25 – 4.25	3.50 – 4.25	3.50 – 4.25
In Cargo lots, per barrel:			
Diesel fuel oil, above 23.9°	$1.05 –$1.20	$1.05 –$1.20	$1.10 –$1.20
Diesel fuel oil, under 23.9°	$1.00 –$1.15	$1.00 –$1.15	$1.05 –$1.15
30-34 gas oil	$1.00 –$1.15	$1.05 –$1.15	$1.10 –$1.15
Grade C fuel oil	$0.75 –$0.85	$0.75 –$0.85	$0.75 –$0.85
Pacific Export (cont'd)			
In Ships' Bunkers, or deep tank lots, per barrel:			
Diesel fuel oil, above 23.9 gravity	$1.125–$1.25	$1.125–$1.25	$1.125–$1.25
Diesel, under 23.9 gravity	$1.025–$1.15	$1.025–$1.15	$1.025–$1.15
Grade C fuel oil	$0.90 –$0.95	$0.90 –$0.95	$0.90 –$0.95
Cased Goods:			
Gasoline, U. S. Motor	$1.40 –$1.50	$1.40 –$1.50	$1.40 –$1.50
Gasoline, 400 e.p. blend	$1.60 –$1.75	$1.60 –$1.75	$1.60 –$1.75
38-40 w.w. kerosine, 150 fire point	$1.15 –$1.30	$1.15 –$1.30	$1.15 –$1.30
Kerosine, prime white	$1.15 –$1.20	$1.15 –$1.20	$1.15 –$1.20

New York Export

(Prices in cents per gallon in barrels, F.a.s. New York)

Cylinder Oils (Pennsylvania Products)

Bright stock:			
Light, 25 pour point	26.00	26.00	26.00
Dark, 25 pour point	25.50	25.50	25.50
Neutral oil:			
200 3 color, 25 pour point	27.50	27.50	28.50
150 3 color, 25 pour point	23.00	23.00	24.00
600 Warren E filtered	20.50	20.50	20.50
600 stm. rfd. unfiltered	17.00	17.00	17.00
650 stm. rfd. unfiltered	18.50	18.50	18.50
600 flash, steam refined	19.50	19.50	19.50
630 flash, steam refined	24.50	24.50	24.50

Wax Domestic *and* Export

(Prices in cents per pound. Tests made by A. S. T. M. methods. Melting points shown below, however, are A. M. P., 3° higher than A. S. T. M. (E. M. P.) melting points. Export prices are f.a.s. carload lots. Domestic prices are f.o.b. refineries in New York and New Orleans districts, in bags, carload lots, with 0.2c discount allowed for shipment in bulk.)

	New York		New Orleans	
Prices Mar. 23	*Domestic*	*Export*	*Domestic*	*Export*
124-6 Y.C. scale	2.50 – 2.60	2.50 – 2.60	2.55 – 2.60	2.55 – 2.60
122-4 W.C. scale	2.50 – 2.60	2.50 – 2.60	2.55 – 2.60	2.55 – 2.60
124-6 W.C. scale	2.55 – 2.60	2.55 – 2.60	2.60 – 2.75	2.60 – 2.75
123-5 Fully refined	4.45	4.125	4.45	4.125
125-7 Fully refined	4.55	4.25	4.55	4.25
128-30 Fully refined	4.80	4.50	4.80	4.50
130-2 Fully refined	5.05	4.75	5.05	4.75
133-5 Fully refined	*5.35	5.25	*5.35	5.25
135-7 Fully refined	*5.60	5.50	....	....

*Shipment either in bags or in bulk.

Gulf Coast

(Prices are f.o.b. ship at Gulf oil terminals representing sellers' opinions except prices specified to the contrary. Prices cover bulk shipments of 20,000 barrels or more, unless otherwise noted.)

Motor Gasoline

For Domestic Shipment

Prices—	March 23	March 16	March 9
59 octane and below	5.625– 5.75	5.625– 5.75	5.625– 5.75
60-64 octane number	6.00	6.00	6.00
65 octane and above	6.125– 6.25	6.125– 6.25	6.125– 6.25

Fuel Oils

No. 1 Fuel oil	3.75 – 3.875	3.75 – 3.875	3.75 – 3.875
No. 2 Fuel oil	3.625	3.625	3.625
No. 4 Fuel oil	3.125	3.125	3.125

*Sale only.

Kerosine

41-43 w.w.	3.875	3.875	3.875

Gasoline

For Export Shipment

U. S. Motor gasoline	5.50	5.50	5.50
60-62, 400 e.p. gasoline	5.50 – 5.625	5.50 – 5.625	5.50 – 5.625
61-63, 390 e.p. gasoline	5.625– 5.75	5.625– 5.75	5.625– 5.75
64-66, 375 e.p. gasoline	5.75 – 6.00	5.75 – 6.00	5.75 – 6.00
U.S. Motor, cases (cargoes)	Discontinued	$1.20 –$1.25	$1.20 –$1.25
64-66, 375 e.p. cases (cargoes)	Discontinued	$1.25 –$1.30	$1.25 –$1.30

Kerosine

44 water white	4.25	4.25	4.25
41-43 water white	3.75 – 3.875	3.75 – 3.875	3.75 – 3.875
41-43 prime white	3.75 – 3.875	3.75 – 3.875	3.75 – 3.875
W.W., cases (cargoes)	Discontinued	$1.15 –$1.20	$1.15 –$1.20
P.W., cases (cargoes)	Discontinued	$1.10 –$1.15	$1.10 –$1.15

(*Continued on next page*)

SEABOARD MARKETS, EXPORT AND COASTWISE

Prices do not include Federal tax. Where $ mark is shown, prices are per barrel of 42 U. S. gallons

(*Continued from preceding page*)

Prices—	March 23	March 16	March 9
Gas and Bunker Oils			
For Domestic and/or Export Shipment			
*26-30 translucent gas oil	3.125- 3.25	3.125- 3.25	3.125- 3.25
*30 plus translucent gas oil	3.125- 3.25	3.125- 3.25	3.125- 3.25
*30 plus transp gas oil	3.25	3.25	3.25
Diesel Oil Ships' bunkers	†$1.50	†$1.50	†$1.50
Grade C bunker oil for ships' bunkers, per bbl	†$0.90	†$0.90	†$0.90
Grade C bunker oil, per bbl. in cargoes	$0.80	$0.79 -$0.80	$0.75 -$0.80
Mexican Crude and Bunker Oils (F.o.b. Steamer, Tampico)			
Heavy Panuco crude taxes to be paid, per bbl	$0 83 -$0 84	$0.83 -$0.84	$0 83 -$0 84
Grade C bunker oil, ships' bunkers, taxes paid, per bbl.	$0.90	$0.90	$0.90
Mid-Continent Lubricating Oils (Prices in cents per gallon in bbls. f.a.s. Gulf terminals. In drums and new barrels, 0.5c to 1c higher per gal. in some instances.)			
190-200 vis. D 210 brt. stk.	25.50	25.50	25.50
150-160 vis. D. 210 brt stk:			
0-10 pour point	22 50	22.50	22.50
10-25 pour point	22.00	22 00	22.00
25-40 pour point	21.50	21.50	21.50
150-160 vis. E 210 brt. stock	21.50	21.50	21.50
120 vis. D 210 bright stock	21.00	21 00	21.00
180 vis. No. 3 color neutral oil:			
0-10 pour point	17.25 -17.50	17.25 -17.50	17.25 -17.50
15-30 pour point	16.25 -16.50	16.25 -16.50	16.25 -16.50
200 vis. No. 3 color neutral oil:			
0-10 pour point	17.75 -18.00	17.75 -18.00	17.75 -18.00
15-30 pour point	16.75 -17.00	16 75 -17.00	16.75 -17.00

*Less than ½ of 1% sulphur. †Lighterage 5c per bbl. additional.

Prices—	March 23	March 16	March 9
Mid-Continent Lubricating Oils Cont'd			
600 s.r. olive green	12.00 -12.50	12.00 -12 50	12.00 -12.50
600 s.r dark green	10.00 -10.50	10.00 -10.50	10.00 -10.50
631 s.r.	17.00	16.50	16.50
South Texas Lubricating Oils (Viscosity at 100° F., pour test 0. Tanker, f.o.b. Gulf oil terminals, for export shipment)			
Unfiltered Pale Oils:			
Vis. Color			
100 No. 3	5.25 - 5.50	5.50 - 6.00	5.50 - 6.00
200 No. 3	6.375- 7.00	6.375- 7.00	6.375- 7.00
300 No. 3	7.00 - 7.50	7.00 - 7.50	7.00 - 7.50
500 No. 3½	7.875- 8.50	7.875- 8.50	7.875- 8.50
750 No. 4	9.00 - 9.25	9.00 - 9.50	9.00 - 9.50
1200 No. 4	9.25 - 9.50	9.50 -10.00	9.50 -10.00
2000 No. 4	9.75 -10.25	9.75 -10.25	9.75 -10.25
Red Oils:			
Vis. Color			
100 No. 5-6	5.25 - 5.50	5.50 - 6.00	5.50 - 6.00
200 No. 5-6	6.125- 6.75	6.125- 6.75	6.125- 6.75
300 No. 5-6	6.75 - 7.00	6.75 - 7.00	6.75 - 7.00
500 No. 5-6	7.25 - 7.625	7.25 - 7.625	7.25 - 7.625
750 No. 5-6	9.00 - 9.25	9.00 - 9.50	9.00 - 9.50
1200 No. 5-6	9.25 - 9.50	9.50 -10.00	9.50 -10.00
2000 No. 5-6	9.75 -10.25	9.75 -10.25	9.75 -10.25

Note: Red oil prices shown above cover oils with green cast; prices for blue cast red oils are slightly lower in some cases.

Tanker Rates

(Approximate tanker freight rates to Continental ports, in shipments per ton of 2240 pounds. British sterling: to U. S. ports, cents per barrel)

	Crude & /or Fuel		Refined Oil & /or Spirits	
Rates—Mar. 23	Last Paid	Owners Ask	Last Paid	Owners Ask
Calif. U.K./Cont.*	18/6	19/-20/	19/6	20/-21/
Gulf-U.K./Cont.*	13/6	14/-14/3	13/10	14/-14/6
Calif.-N. Atlantic (not E. of N. Y.)	....	82c	85c	85c
Gulf-N. Atlantic** (not E. of N. Y.)	†25c	†25-26c	25c	25-26c

Note: Dirty boat quotations are enlarged to cover, "Fuel and Light Crude" quotations.

*Continental ports in range between Bordeaux and Hamburg, both inclusive.

**Venezuela loading same rate: Tampico 2c to 3c per bbl. additional

†Rates for heavy crude or fuel 1c to 2c higher than for light crude

Creed for Salesmen

NEW YORK—An 18-page manual of constructive selling hints for sales organizations of members of the Gasoline Pump Manufactures Association has been writeen by G. Denny Moore, managing director. The manual ends with a creed which contains these tenets among others:

"I believe in my product and my proposition.

"I believe in being aggressive, not defensive; creative not destructive; for growth is positive, not negative.

"I believe that competition is a necessity—a natural condition in business. Without it values fall and standards cease to exist.

"I believe that 'knocking' and 'chiseling' are beneath me. . . .

"I believe in the power of a good example; that I should lead the way and be a good competitor."

Contest in Gas Heater Sales

The goal set by manufacturers of automatic gas water heaters is to sell 300,000 in 1936. An eight-month contest has been arranged by the Association of Gas Appliance & Equipment Mfgrs. in which 346 gas companies and 1566 plumbers throughout the country have registered already, it is announced.

COMING MEETINGS

(*Continued from page 9*)

Virginia Oil Men's Association, Patrick Henry Hotel, Roanoke, Va., May 21.

National Stripper Well Association, Tulsa, May 22.

Pennsylvania Grade Crude Oil Assn., 13th annual meeting, State College, Pa., June 18, 19.

American Society for Testing Materials, annual meeting, Chalfonte-Haddon Hall, Atlantic City, N. J., June 29 to July 3.

American Chemical Society, semi-annual meeting, Pittsburgh, Pa., Sept. 7 to 12.

American Petroleum Institute, 17th annual meeting, Chicago, Nov. 9 to 12.

Independent Petroleum Association of America, annual meeting, Oklahoma City, Okla., Nov. 30 and Dec. 1.

5 Refiners Are Planning Retail Sales Campaign

WICHITA, Kansas— An advertising and sales campaign for jobbers and dealers in the middle west is planned by a group of Kansas and Oklahoma refiners.

To produce materials for the campaign the Independent Refiners Service Corp. has been chartered, and will license refiners to use the advertising and sales matter.

Five refiners have been licensed, so far, to use the campaign. They are Kanotex Refining Co., Arkansas City, Derby Oil Co., Wichita, and El Dorado Refining Co., El Dorado all in Kansas; and the Rock Island Refining Co., Duncan, and the Eason Oil Co., Enid, Oklahoma.

Headquarters of the corporation are in Wichita. C. P. Sullivan is in charge.

The sales plan is expected to be operative in 14 midwestern states, applying to several thousand jobbers and dealers.

CRUDE OIL MARKETS

Prices in $ per bbl. of 42 U. S. gals. at the well. A. P. I. gravity. Prices are effective as of 7 a.m. of dates as given.

Eastern Fields

Posted by Joseph Seep Purchasing Agency

(Effective Jan. 13, 1936)

Penna. Grade Oil in Southwest Penna. Pipe Lines.....$2.17
Penna. Grade Oil in Eureka Pipe Lines (West Virginia).....$2.12
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O.).....$1.97
Corning Oil in Buckeye Pipe Lines (Ohio) $1.42

Posted by Other Companies

Tide Water Pipe Co., Ltd.
Bradford-Alleghany district (Penna. and N. Y.) (Effective Jan. 13, 1936)..$2.45
*The Pennzoil Co.: (Effective Jan. 13, 1936)
Penna. Grade Oil in National Transit Lines*.....$2.42
Ashland Oil & Transportation Co.:
Somerset Oil in Ashland Lines (Ky.): (Effective Jan. 9, 1936)
Big Sandy River.....$1.30
Kentucky River.....$1.38

*The Pennzoil Co. posts $2.42 in Cochran, Franklin, Hamilton and Doolittle, Pa. fields; prices in other lower districts range down to $2.37 per bbl. at well.

Michigan

Posted by Pure Oil Co.

Midland, Midland County (Jan. 14, 1936) $1.32

Posted by Simrall Pipe Line Corp.

(Effective Jan. 14, 1936)

West Branch and equal grades.....$1.16
Beaverton, Crystal, Greendale, Porter and equal grades.....$1.32

Central States Fields

Posted by Ohio Oil Co.

(Effective Jan. 9, 1936)

Illinois, Princeton, Western Kentucky..$1.23

(Effective Jan. 10, 1936)

Lima.....$1.25

Posted by Stoll Oil Refining Co.

(Effective Jan. 9, 1936)

Stoll Pipe Line Oil (Ky.).....$1.28

Canadian Fields

Posted by Imperial Oil Refineries, Ltd.

Western Ontario

(Effective Sept. 9, 1933)

Petrolia.....$2.10
Oil Springs.....$2.17

Alberta—Turner Valley

(Prices f.o.b. field tankage)

Crude: (Effective Dec. 9, 1933)		Naphtha: (Effective May 21, 1934)	
40-44.9	$1.50	†Clear	$2.55
45-49.9	2.07	†Discolored	$2.31

(Effective May 21, 1934)
50 and above..$2.19

†Clear naphtha: 22 color; 10 lbs. vapor pressure, Reid method; 90% recovery; end point, 410°, Discolored naphtha: same specifications as for clear naphtha except color.

Mid-Continent

Posted by Stanolind Crude Oil Purchasing Co.

(Effective Jan. 9, 1936)

(In Oklahoma-Kansas)	(In North-North Central Texas)
Below 29.....$0.94	$0.84
29-29.9..... 0.96	0.86
30-30.9..... 0.98	0.88
31-31.9..... 1.00	0.90
32-32.9..... 1.02	0.92
33-33.9..... 1.04	0.94
34-34.9..... 1.06	0.96
35-35.9..... 1.08	0.98
36-36.9..... 1.10	1.00
37-37.9..... 1.12	1.02
38-38.9..... 1.14	1.04
39-39.9..... 1.16	1.06
40 and above.... 1.18	1.08

Above Stanolind prices met as follows:

Jan. 9, by The Texas Co. in North and North Central Texas; Continental Oil in all three states.

Note: Stanolind prices in Okla.-Kans. are for quantities computed by 97% tank tables. In Texas, 99% tank tables are used, volume corrected to 60° F., and deduction for full b.s. & w. content.

Posted by Carter Oil Co.

(In Oklahoma

(Effective Jan. 9, 1936)

Below 25	$0.86	33-33.9	$1.04
25-25.9	0.88	34-34.9	1.06
26-26.9	0.90	35-35.9	1.08
27-27.9	0.92	36-36.9	1.10
28-28.9	0.94	37-37.9	1.12
29-29.9	0.96	38-38.9	1.14
30-30.9	0.98	39-39.9	1.16
31-31.9	1.00	40 and above	1.18
32-32.9	1.02		

Jan. 9, Carter's Oklahoma gravity and price schedule met in Oklahoma-Kansas by Sinclair-Prairie, and Humble's West Central Texas schedule met in North and North Central Texas where Sinclair-Prairie buys. Same day, Shell Petroleum met Carter in full in Oklahoma-Kansas.

Posted by Magnolia Petroleum Co.

(Effective Jan. 9, 1936)

In Oklahoma, same schedule as Carter Oil, which see above, beginning with below 25, at $0.86 and ending with 40 & above, at $1.18.

In Texas: North and North Central, including Burkburnett, Archer, Stephens, Henrietta, Electra, Comanche and Olden; and in Central Texas, including Mexia, Wortham, and Panola county, same gravity and price schedule as Humble in West Central Texas, which see below, beginning with below 29 at $0.84, and ending with 40 and above, at $1.08.

†***Posted by Humble Oil & Refining Co.***

Texas Fields

(**West Central Texas*)

(Effective Jan. 9, 1936)

Below 29	$0.84	35-35.9	$0.98
29-29.9	0.86	36-36.9	1.00
30-30.9	0.88	37-37.9	1.02
31-31.9	0.90	38-38.9	1.04
32-32.9	0.92	39-39.9	1.06
33-33.9	0.94	40 and above.	1.08
34-34.9	0.96		

*Includes Brown, Callahan, Coleman, Comanche, Eastland, Fisher, Haskell, Jones, Shackelford, Stephens, Throckmorton and Young counties.

Shell Petroleum Corp., on Jan. 9, met Humble in Fisher county, except that Shell posts five lower grades, beginning with below 25 gravity at $0.76; 25-25.9, $0.78; 26-26.9, $0.80; 27-27.9, $0.82; and 28-28.9, $0.84; rest of schedule same as Humble's in West Central Texas.

†Effective Dec. 1, 1934, Humble prices are based on 99% tank tables at 60F. Allowance or deduction of 1% is made for each 25° change in temperature above or below 60F.

**East Central Texas*

(Effective Jan. 9, 1936)

Below 29	$0.91	35-35.9	$1.05
29-29.9	0.93	36-36.9	1.07
30-30.9	0.95	37-37.9	1.09
31-31.9	0.97	38-38.9	1.11
32-32.9	0.99	39-39.9	1.13
33-33.9	1.01	40 and above.	1.15
34-34.9	1.03		

*Including Anderson, Cherokee, Limestone, Navarro and Van Zandt counties.

Stanolind Oil & Gas Co., Jan. 20, posted in Marion County (East Central Texas), below 29 oil at $0.86, plus 2c differential, to 40 and above at $1.10.

Jan. 9, Sinclair-Prairie met Humble's prices in Mexia.

Panhandle Texas

Posted by Humble Oil & Refining Co.

(Effective Jan. 9, 1936)

	Gray County	Carson-Hutchinson
Below 35	$0.86	$0.81
35-35.9	0.88	0.83
36-36.9	0.90	0.85
37-37.9	0.92	0.87
38-38.9	0.94	0.89
39-39.9	0.96	0.91
40 & above	0.98	0.93

Jan. 9, above prices met by Sinclair-Prairie, Magnolia and The Texas Co. in the entire area, also by Continental Oil in Carson-Hutchinson.

East Texas

(Effective Jan. 9, 1936)

Stanolind, Humble, Shell, Sinclair-Prairie, Texas, Sun Oil and Magnolia.....$1.15

Shell also posted on Jan. 9 in Livingston area, Polk County, Texas, $1.15.

West Texas and New Mexico

Posted by Humble Oil & Refining Co.

(Effective Jan. 14, 1936)

(Including Andrews, Crane, Crockett, Ector, Glasscock, Howard, Winkler and Upton Counties, Texas, and Lea county, New Mexico).

Below 29	$0.75	33-33.9	$0.84
29-29.9	0.76	34-34.9	0.86
30-30.9	0.78	35-35.9	0.88
31-31.9	0.80	36 & above..	0.90
32-32.9	0.82		

Pecos, West Texas.....$0.85

Posted by Continental Oil Co.

(Effective Jan. 9, 1936)

Artesia, Jackson and Maljamar pools, N. M. $0.80

Jan. 16, Magnolia met Humble in Crane, Upton, Howard, Glasscock, Mitchell and Winkler.

Jan. 9, Texas Co. posted Winkler and Lea counties at $0.85; Crane and Upton, $0.80.

Shell Petroleum Corp., on Jan. 23, met Humble in Crane, Glasscock, Howard, Pecos (except Yates shallow pool), Winkler, and Upton counties, Tex., and in Lea County, N. Mex. On Jan. 9, Shell posted in Yates shallow pool in Pecos county, Tex., $0.75.

South and Southwest Texas

Posted by Humble Oil & Refining Co.

(Effective Jan. 14, 1936)

Darst Creek	$0.97	Pettus	$1.25
Salt Flat	0.97	Tomball	1.30
Saxet	0.90	Mirando	0.85

Shell Pet. Corp. on Jan. 9, posted $0.97 in Salt Flat district, Tex.

Anahuac (Chambers county) and Dickinson (Galveston county)

(Effective Jan. 9, 1936)

30-30.9	$1.04	36-36.9	$1.16
31-31.9	1.06	37-37.9	1.18
32-32.9	1.08	38-38.9	1.20
33-33.9	1.10	39-39.9	1.22
34-34.9	1.12	40 & above	1.24
35-35.9	1.14		

Jan. 9, The Texas Co. posted $0.97 for Darst Creek.

Jan. 9, Magnolia posted $0.97 in Darst Creek; $1.30 in Tomball; $0.90 in Luling; $1.00 in Lytton Springs; $0.85 for Mirando; $1.10 for Cleveland, Liberty county, Tex.; $1.03 in Hardin, Liberty county, Tex.

Posted by Humble

Conroe and Raccoon Bend

(Deep sand crudes)

(Effective Jan. 9, 1936)

35-35.9	$1.24	38-38.9	$1.30
36-36.9	1.26	39-39.9	1.32
37-37.9	1.28	40 & above	1.34

Jan. 9, Texas Co. met above prices.

North Louisiana-Arkansas

Posted by Standard Oil Co. of Louisiana

(Effective Jan. 10, 1936)

(In Caddo, Homer, Haynesville, Sabine, De Soto, Rodessa, Sarepta, Carterville, El Dorado and Miller county)

Below 25	$0.78	33-33.9	$0.96
25-25.9	0.80	34-34.9	0.98
26-26.9	0.82	35-35.9	1.00
27-27.9	0.84	36-36.9	1.02
28-28.9	0.86	37-37.9	1.04
29-29.9	0.88	38-38.9	1.06
30-30.9	0.90	39-39.9	1.08
31-31.9	0.92	40 and above.	1.10
32-32.9	0.94		

Smackover, Ark.....$0.75
Nevada, Ark..... 0.65
Urania, La. (La. Oil Refg. Co., Jan. 1, '34) 0.87
Tepetate, La. (Continental Oil, Jan. 9, '36)$1.12

The Texas Co., effective Jan. 9, posted in No. La.-Ark. same prices as Humble posts in West Central Texas. It also posted $0.80 for Smackover and $1.12 for La Fitte, La.

Magnolia Petroleum Co., effective Jan. 16, posted on No. La.-Ark. crude, prices beginning with $0.86 for below 29 gravity, plus 2 cent differential to 40 and above, at $1.10; this posting includes Rodessa, beginning March 16, 1936. It also posted on the same day, Eldorado (East Field), and Smackover, Ark., $0.75; Lockport, La., below 20 gravity, at $0.92, plus 2c differential, to 34 and above, which is $1.22; and for Iowa, La. and Cameron-Meadow field, Cameron Parish, La., below 20 at $0.82, plus 2c differential, to 34 and above, at $1.12.

Stanolind Oil & Gas Co., Jan. 20, posted in Caddo Parish, La., below 29 oil at $0.86, plus 2c differential, to 40 & above at $1.10.

Shell Pet. on Jan. 9, posts same schedule in Black Bayou and White Castle, La. as Magnolia posts in Lockport, which see in above paragraph and in Iowa district, La. posts same schedule as Magnolia in Iowa and Cameron, which also see above.

(*Continued on next page*)

NEW REFINING PATENTS

Desulfurization. No. 2 028 335, issued Jan. 21, 1936; filed April 10, 1931; V. Kalichevsky, assignor to Standard Oil Development Co.; 5 claims.

TREATMENT of oil distillates with an anhydrous mixture of sodium and potassium hydroxides containing about 1¼ pounds of sodium hydroxide per pound of sour sulfur in the distillate and approximately from 1/3 to 2/3 pounds of potassium hydroxide per pound of corrosive sulfur.

* * *

Hydrogenation. No. 2 028 348, issued Jan. 21, 1936; filed Dec. 22, 1932; M. Pier, W. Simon, and W. Kroenig, assignors to Standard-I. G. Co.; one diagram; 2 claims.

PROCESS of hydrogenating a middle oil at 440 C. (824 F.) and 200 atmospheres pressure in the presence of a catalyst consisting of molybdenum bromide and tungsten sulfide. Preferably 10 per cent by weight is used. Other halogen compounds of molybdenum, tungsten or vanadium or their mixtures may also be used; more particularly the chlorine, bromine, or iodine compounds.

* * *

Fractionation. No. 2 029 528, issued Feb. 4, 1936; filed May 21, 1932; E. W. Gard, assignor to Union Oil Co. of Calif.; one diagram; 9 claims.

WITHDRAWAL of a portion of the reflux from an intermediate point in a main fractionating column, passing it in counter current contact with heated vapors or steam to remove low boiling components, thereby yielding an intermediate fraction of higher flash point, fractionating the low boiling components in an auxiliary fractionating column in countercurrent contact with reflux oil out of contact with vapors withdrawn from the main column, and returning the reflux condensate from the auxiliary column to the main column.

Objects are to produce a fraction the bottoms of which may be exhausted to any desired degree and at the same time an overhead which may be fractionated to any specified end point; to eliminate the disadvantages of passing the unfractionated vapors from the exhausting column directly to the condensing system; to eliminate sensitivity and difficulty of control; and to avoid disturbing the operation, control, or fractionation in the main column.

* * *

Stabilization. No. 2 029 256 issued Jan. 28, 1936; filed Aug. 25, 1933; R. B. Day, assignor to Universal Oil Products Co.; one diagram; 2 claims.

TREATMENT of distillates in motor fuel range with aqueous hydrogen chloride in the presence of a natural zinc-bearing clay (particu-

CRUDE OIL MARKETS

Continued from preceding page

*Gulf Coastal Fields

Posted by Humble Oil & Refining Co.

(Effective Jan. 9, 1936)

Below 18	$0.88	26-26.9	$1.06
18-18.9	0.90	27-27.9	1.08
19-19.9	0.92	28-28.9	1.10
20-20.9	0.94	29-29.9	1.12
21-21.9	0.96	30-30.9	1.14
22-22.9	0.98	31-31.9	1.16
23-23.9	1.00	32-32.9	1.18
24-24.9	1.02	33-33.9	1.20
25-25.9	1.04	34 and above	1.22
Refugio heavy			$0.90

Effective Dec. 1, 1934, Humble prices are based on 99% tank tables at 60 F. Allowance or deduction of 1% is made for each 25° change in temperature above or below 60 F.

*Includes these fields: Barbers Hill, Goose Creek, Hull, Humble, Liberty, Moss Bluff, Mykawa, Orange, Pierce Junction, Rabbs Ridge, Raccoon Bend (shallow sand), Refugio light, Sour Lake, Spindletop, Sugarland, and West Columbia.

Above gravity and crude schedule met Jan. 9 by The Texas Co., except that Texas Co. posts $0.92 for below 20. Jan. 9, Sinclair-Prairie met above Humble schedule in full.

Rocky Mountain Fields

Posted by Stanolind Oil & Gas Co.

(Effective Jan. 9, 1936)

Salt Creek, Midway and Dutton Creek, Wyo., same schedule as Stanolind posts in Oklahoma-Kansas which see.

Elk Basin, light	$1.28
Grass Creek, light	1.28
Grass Creek, heavy	0.72
Greybull-Torchlight	1.28
Iles, light, Col	1.06
Iles, heavy	1.00
Hogback, N. M	1.21
Frannie light (Effective Feb. 24, '36)	0.78
Frannie heavy	0.72
Hamilton Dome, Wyo	0.67
Pondera, Mont	1.05

Posted by Ohio Oil Co.

(Effective Jan. 9, 1936)

Elk Basin, Wyo	$1.28
Grass Creek, light and heavy	1.28
Rock Creek	1.12
Big Muddy	1.11
Sunburst, Mont	1.25

Posted by Other Companies

(Effective Jan. 9, 1936)

Cutbank, Mont. (*Internatl. Refg. Co.)	$1.50
Cat Creek, Mont. (Continental Oil)	1.28

*Texas Co. subsidiary.

CALIFORNIA, Posted by Standard Oil of California

All gravities above those quoted take highest price offered in the field. Effective Feb. 25, 1936 except Huntington Beach, Playa del Rey, Santa Fe Springs, Kern Front, Signal Hill (Long Beach) effective Mar. 7, 1936

Gravity	Signal Hill (Long Beach)	Seal Beach	Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda Brea Canon	Athens Rosecrans	Dominguez	Torrance	Richfield	Whittier East Coyote (La Habra)	Montebello	West Coyote Hills	Santa Fe Springs	‡Newhall and others	Mountain View	Elk Hills	Buena Vista Hills, **Midway-Sunset	Lakeview Area	Lost Hills	Coalinga	Wheeler Ridge
14-14.9	$0.80	0.79	0.74	0.78	0.79	0.80	0.76	....	....	0.80	0.76	0.76	0.77	0.78	....	0.70	....	0.65	0.70	0.65	0.70	0.70	....
15-15.9	.80	.79	.74	.78	.79	.80	.76	....	....	.80	.76	.76	.77	.78	....	.70	....	.65	.70	.65	.70	.70	....
16-16.9	.80	.79	.74	.78	.79	.80	.76	....	....	.80	.76	.76	.77	.78	....	.70	....	.65	.70	.65	.70	.70	....
17-17.9	.80	.79	.74	.78	.81	.80	.76	....	....	.80	.76	.76	.77	.78	....	.70	....	.65	.70	.65	.70	.70	....
18-18.9	.80	.79	.74	.78	.84	.80	.78	....	....	.82	.76	.76	.77	.78	....	.70	....	.65	.70	.65	.70	.70	....
19-19.9	.82	.79	.74	.82	.87	.84	.81	....	....	.85	.76	.78	.77	.78	....	.70	0.70	.66	.74	.66	.74	.71	0.70
20-20.9	.85	.79	.74	.85	.90	.88	.84	....	....	.88	.78	.82	.77	.80	....	....	.70	.68	.78	.68	.78	.72	.70
21-21.9	.88	.79	.74	.89	.93	.93	.88	....	....	.91	.80	.85	.77	.84	.78	....	.73	.71	.82	.71	.82	.74	.70
22-22.9	.92	.82	.74	.92	.96	.98	.92	....	....	.93	.84	.89	.79	.88	.78	....	.77	.74	.87	.74	.86	.78	.72
23-23.9	.95	.86	.77	.96	.99	1.02	.96	.84	.79	.96	.88	.93	.82	.92	.78	....	.80	.77	.92	.77	.90	.82	.76
24-24.9	.99	.91	.80	1.00	1.02	1.06	.99	.88	.81	.99	.91	.96	.85	.96	.82	....	.84	.80	.97	.80	.94	.86	.79
25-25.9	1.03	.95	.82	1.03	1.05	1.11	1.03	.93	.83	1.02	.95	....	.89	.99	.86	....	.88	.83	1.01	.83	.98	.90	.83
26-26.9	1.06	1.00	.85	1.07	1.09	1.16	1.06	.98	.86	1.05	.98	....	.92	1.03	.90	....	.91	.86	1.06	.86	1.02	....	....
27-27.9	1.10	1.05	.88	1.11	1.12	....	1.10	1.03	.88	....	1.02	....	.96	1.06	.95	....	.95	.88	1.10	.88	1.06	....	....
28-28.9	1.14	1.10	.90	1.14	1.15	....	1.14	1.07	.90	....	1.06	....	.99	1.10	.99	....	.99	.91	1.15	.91	1.10	....	....
29-29.9	1.17	1.15	.93	1.18	1.18		1.17	1.12	.93	....	1.09	....	1.03	1.14	1.03	....	1.02	.94	1.20	.94	1.14	....	....
30-30.9	1.21	1.19	.95	1.22	1.21		1.21	1.17	.95	....	....	....	1.07	1.17	1.08	....	1.06	.97	1.25	.97	1.18	....	....
31-31.9				....	1.24		1.24	1.22	.97	....	....	....	1.11	1.21	1.12	....	1.09	.99	1.29	.99			
32-32.9	*Elwood Terrace			....	1.27		1.27	1.27	1.00	....	....	....	1.14	1.25	1.16	....	1.13	1.02	1.34	1.02	Kettleman Hills		
33-33.9	....	1.28	....	....	....		....	1.32	....	....	....	....	1.18	1.28	1.20	....	1.17	1.04	1.38	1.04	....	1.19	....
34-34.9	....	1.32	....	....	....		....	1.37	....	....	....	....	1.22	1.32	1.25	....	1.20	....	....	....	....	1.23	....
35-35.9	....	1.35	....	....	....		....	1.42	....	....	....	....	1.25	....	1.29	....	....	....	....	....	....	1.27	....
36-36.9	....	1.39	....	....	....		....	1.46	....	....	....	....	1.29	....	1.33	....	....	....	....	....	....	1.31	....
37-37.9	....	1.43	....	....	....		....	1.51	....	....	....	....	1.32	....	1.37	....	....	....	....	....	....	1.35	....
38-38.9	....	....	....	....	....		....	1.56	....	....	....	....	1.36	....	1.42	....	....	....	....	....	....	1.39	....
39-39.9	....	....	....	....	....		....	1.61	....	....	....	....	1.40	....	....	....	....	....	....	....	....	1.43	....
40-40.9	....	....	....	....	....		....	1.66	....	....	....	....	1.43	....	....	....	....	....	....	....	....	....	....

F.O.B. Standard Pipe Line

*F.o.b. ship.

‡Also McKittrick, Kern River, Kern Front and Round Mountain $0.70 thru 19.9 gravity; no higher gravity quoted. **Except Lakeview Area.

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* * *

Polymerization. No. 2 030 030, issued Feb. 4, 1936; filed June 30, 1932; M. Halpern, W. B. Logan, R. E. Manley, and W. Ullrich, assignors to The Texas Co.; one diagram; 3 claims.

A TWO-STAGE process in which gases are cracked into products having a high degree of unsaturation and the cracked products polymerized with the aid of an adsorptive catalyst produced by acid treating clays of the Bentonite or Montmorrillonite type characterized by having 50-100 per cent thereof finer than 200 mesh and with a filter aid material (5-25 per cent) to reduce the resistance of the clay to the flow of vapors and gases.

* * *

Polymerization. No. 2 028 886, issued Jan. 28, 1936; filed Jan. 19, 1929; C. R. Wagner, assignor to The Pure Oil Co.; no drawing; 10 claims.

A CONTINUOUS non - catalytic process of manufacturing gasoline-like aromatic hydrocarbons from unsaturated hydrocarbons of the ethylene series, which consists in subjecting gases having an ethylenic content sufficiently high to produce an exothermic reaction to temperatures of 650-1000 F. and to 500-1500 pounds per square inch pressure, and regulating the time of reaction to convert a substantial percentage of the gases.

* * *

Treatment. No. 2 029 115, issued Jan. 28, 1936; filed Dec. 14, 1931; J. C. Morrell, assignor to Universal Oil Products Co.; no drawing; 4 claims.

TREATMENT of light distillates in the vapor phase with a solution containing sufficient sulfuric acid to effect substantial refining of the vapors and to which has been added a sulfonated hydrocarbon serving to dilute it or act as a spacing agent. A large number of reagent treating solutions of varying composition may be made up to suit the needs of different treatments. The process may be conducted in any type of apparatus suitable for efficiently contacting vapors with liquid treating reagents.

* * *

Sweetening. No. 2 028 998, issued Jan. 28, 1936; filed Dec. 2, 1933; W. A. Schulze and L. V. Chaney, assignors to Phillips Petroleum Co.; no drawing; 10 claims.

METHOD for sweetening mercaptan-bearing oils in which a hypochlorite solution is used in the absence of oxygen carriers. The mercaptans are converted to disulfides and alkyl sulfur chlorides, the latter remaining in the fluid. The hypochlorite solution is separated, then the fluid is treated with a strong reducing solution of a water soluble alkaline earth sulfites, cyanides and stannites, whereby the alkyl sulfur chlorides are reduced to disulfides.

An advantage claimed is that the resulting products are substantially non-corrosive and a substantial increase in stability towards sunlight is gained.

The sodium sulfite solution may vary in concentration from 10 to 330 grams of Na_2SO_3 per liter of solution.

* * *

Lubricant preservative. No. 2 024-990, issued Dec. 17, 1935; filed Dec. 7, 1932; Gus Kaufman, assignor to The Texas Co.; 4 claims.

A GREASE consisting essentially of a mixture of neat's-foot oil, caustic alkali soap of neat's-foot oil and 30-50 per cent of mineral lubricating oil, the grease being solid at ordinary temperature.

The patent provides means for solidifying neat's-foot oil whereby, instead of hydrogenating the oil, the same effect is obtained by partially saponifying it. The resultant soap produced in the oil increases the hardness while the unsaponified oil retains its original qualities.

* * *

Solvent fractionation. No. 2 029-689, issued Feb. 4, 1936; filed April 29, 1933; G .L. Parkhurst, assignor to Standard of Indiana; one drawing; 8 claims.

IN THE solvent fractionation of a lubricating oil stock, the steps which comprise mixing the stock with liquid sulfur dioxide and a vapor phase cracked naphtha containing at least 25 per cent olefins and separately recovering an extract fraction and a raffinate fraction. The naphtha boils between 250 and 450 F. The addition of the naphtha was found to very materially improve the characteristics of the raffinate fraction used in manufacturing lubricating oil.

* * *

Color improvement. No. 2 025 766, issued Dec. 31, 1935; filed Aug. 4, 1933; Brian Mead, assignor to Standard Oil Development Co.; one diagram; 9 claims.

IN DISTILLING an acid treated oil, sufficient oil-soluble soap is added to take up any acid-reacting substance evolved. A soap such as the crude sodium naphthenate obtained as a by-product in distilling naphthene base oils over caustic is used. Corn oil soap, cocoanut oil soap, and cotton seed oil soap are examples. Several advantages of the soaps over caustic are mentioned.

* * *

Stabilization. No. 2 030 033, issued Feb. 4, 1936; filed June 10, 1933; E. B. McConnell, assignor to Standard Oil of Ohio; no diagram; 8 claims.

PROCESS of inhibiting gum-formation in cracked distillates, which comprises subjecting it to a hydroxyquinoline such as 8-, 2-, 6-, and 7-hydroxy quinoline and 2-, 6-, 7-, and 8-hydroxy tetra-hydroquinoline.

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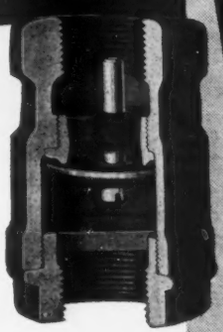

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Kerosine-Gasoline Blends Make Appearance in East Texas

DALLAS, March 20

THE time-worn practice of blending kerosine and natural gasoline to obtain a product which would permit at least a partial evasion of the gasoline tax has flared up in East Texas, but apparently is being stamped out with methodical dispatch by the state comptroller.

This flare-up of an old practice is of interest primarily because it shows to what extremes of petty chicanery some of the gasoline peddlers and "hot" oil refiners have been driven as the East Texas area remained under good control, both as to crude and refined products.

Formerly the "hot" oil refiner had a wide margin between the cost of his illegally produced crude plus his operating costs, and the price he obtained in the field for his products. And the peddler who bought the products in the field obtained his requirements at a price sufficiently low to give him a margin well under the retail price for third grade gasoline.

The tight crude market and the scarcity of illegally produced crude at "under the market" have knocked virtually all the profit out of hot oil refinery operations, with the retail price for third grade gasoline having failed to reflect in any large degree the improvement generally in East Texas.

Chiseling on the gasoline tax, too petty under the former operations, apparently is the last resort for those of the bootlegging peddlers and small "hot" oil refiners who have attempted to remain in business.

The state comptroller is resorting to that section of the Texas law which specifies the type of motor fuel that can be sold, and is filing charges where violations are discovered. The law specifies that no product shall be sold for motor fuel which, among other things, has an end point exceeding 437° F.

Some of the kerosine-natural gasoline blending has been done so that the end point has been brought below that maximum. On the other hand the corps of inspectors which has been concentrated in the 37 counties in eastern Texas have found some products having an end point as high as 512 being sold as third grade motor fuel.

Within the past 10 days charges have been filed against 107 dealers in the Dallas district, comprising the 37 eastern Texas counties. Of this number 52 have pleaded guilty, seven have been convicted in justice of the peace courts and one in a county court. The penalty is a fine of $25 to $200. Recent fines have averaged $50.

It is entirely likely that in some of these cases the dealers were unintentionally guilty of violating the law which prohibits sale of an inferior motor fuel. The kerosine and natural gasoline was blended "in the field", and the peddler or refiner making the blend collected the full amount of the tax although he paid to the state only the tax on the natural gasoline used, there being no state tax on kerosine in Texas. The dealer in buying his requirement in some cases may have paid the tax on the full dump, and in turn collected the tax from his customers.

The state comptroller has attempted wherever possible to estimate the percentage of kerosine in the inferior fuel and has succeeded in collecting, in some instances, the estimated amount of tax due the state.

The first intimation of this blending practice came not long ago when the comptroller learned that kerosine which could not be shipped interstate nevertheless was in strong demand and scarce at prices 0.50 to 0.75 cent a gallon higher than the oil made from legally produced crude. An investigation showed that a wave of blending had started and he accordingly concentrated his inspectors in those areas adjacent to the East Texas field with instructions to take samples frequently and from as many dealers as possible.

Not all of the blending apparently was done in the East Texas area, but it is doubtful if the volume done elsewhere was very large, due to the transportation costs for both the kerosine and natural gasoline to point of blending.

Suggests Tax Maximum

NEW YORK—A recommendation of a state gasoline tax of only 2 cents a gallon and the use for highways of all revenues from special additional taxes paid by motor vehicle owners was contained in the legislative program adopted by the Milwaukee, Wis. motor club, according to the American Petroleum Industries Committee. The program holds that the maximum tax upon passenger motor vehicles should not exceed a weight tax of 35 cents per 100 pounds and a gasoline tax of 2 cents per gallon, with all other forms of taxes upon either vehicle or its operation eliminated.

LETTERS to the EDITOR

Code Would Be Useless

Dear Editor:

I just looked over the new code. I cannot see anything in it that is worth the bother and cost. The larger companies are running the oil business as well or better than we would-be independents can. The margin, although too high from one point of view, is not from another. There are a great many men employed running oil stations which a smaller margin would exterminate. A 2c margin above the 3½ cents for stations is enough for jobbers and we can thank our stars if it don't get worse. With large margins stations can meet competition such as trackside or other cutters although getting the regular price for most of their business, tourists, etc. I do not want to make a personal complaint. I am just telling some facts about what we have to contend with and the large companies are doing best they can under the circumstances.

These are some things we have here: A large packing company buys by the car load and serves employes at cost. A large company employing about 500 buys carlots and runs a 24-hour one-stop station. Trackside stations and a coal company are selling at cost. A certain company that operates stations along state highways thinks it has a God-given right to sell so much under the general price. All these don't and never will recognize a code. There are also three Co-ops. operating here who have no price. To check these the large companies are selling at a manipulated price to farmers which sometimes is 2½ cents below 3rd grade.

Now the association will not and cannot change this condition so why a code that is useless as to the complaint of too many stations the code does not restrict building, repairing, etc., so no code is needed there as to fighting tax on gasoline and oil same as fighting new deal after benefits were received. The oil and auto business is well able to take care of our roads. Up to about ten years ago I used a set of tires on my trucks every year. Now they last three years. As taxes are high on everything, the oil and auto business should not squawk as long as we can get this tax and car license on our roads.

A. Bittner,
A. Bittner Oil Co.
Winona, Minn.

A.P.I. Proceedings Published

NEW YORK—The American Petroleum Institute has published Sections 1 to 3 of proceedings of the 16th annual meeting held last November at Los Angeles. Section 1 covers general meetings, Section 2 marketing and Section 3 refining. Copies are 50 cents each.

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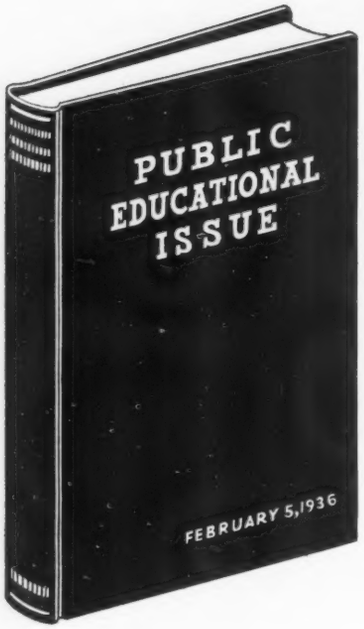

HOW big is the oil industry? How many people does it employ? What is the extent of the oil industry's payroll?

How much crude oil has been taken from the earth? How much oil is there left in the ground? What will we do for motor fuel if all the crude oil were exhausted?

You will find the answers to these questions and hundreds of others . . . in the February 5th Public Educational Issue of NATIONAL PETROLEUM NEWS.

A volume of 512 pages that tells the story of oil from the early days to the present . . . in a manner never before attempted in the history of the oil industry. Packed with facts, charts, graphs and pictures relating to the production, refining, marketing and retailing of oil . . . this Public Educational Issue is truly the greatest STORY OF OIL ever told!

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Gasoline Pump Shipments Double in 1935

WASHINGTON, March 19 — Gasoline pump shipments in 1935 were nearly double the 1934 total and their value was more than the sum total of 1933 and 1934, the annual summary of the Bureau of Census indicates. The summary, based on data reported by 30 identical manufacturers, was released today by Director W. L. Austin.

The manufacturers whose data are included in these tabulated statistics and graphs produced approximately 90 per cent of the total value of the output in the industry at the Census of Manufactures for 1933. The following table shows the high points in the report. Detailed tables indicate that last August was the best month during the four years both in volume of shipments and value of pumps.

Shipments and Value of Gasoline Dispensing Pumps

Year	Power Operated (No.)	Hand Operated (No.)	Value
1935	27,843	7,387	5,243,325
1934	27,843	7,387	5,243,325
1933	48,111	14,399	5,576,481
1932	62,264	26,789	8,400,470
1931	Reports started May, 1931		

The tables also indicate similar data for other pumps, including airport fueling units, masonry insert units, unclassified gasoline pumps, lubricating oil outfits, (including pump and tank), lubricating oil pumps (including barrel pumps), kerosine pumps, grease pumps (with buckets), grease pumps (including drum pumps), grease guns (including high pressure lubricators and lubrication systems, and others.

Gasoline dispensing pumps are broken down into the several types which are being used and data given by months of shipments and values in 1935 only. Similar data is given also for the above named other pumps. Tables indicate that seven times as many meter pumps as unmetered pumps for dispensing gasoline were shipped in 1935. Their value was 20 times as great. Out of the 56,168 metered pumps 51,855 were signal-meter, power-operated of the reciprocating-piston type. Their value was $9,780,638 out of the total of $10,437,628 for metered pumps in 1935.

Create Emergency Jobs

NEW YORK, March 21.—The work required to furnish emergency road service to motorists during 1935 created jobs for one or more workers per car, according to an analysis made by the American Automobile Association. The report revealed that the services rendered by the Association's affiliated garages and filling stations required the emergency work of more than 27,000,000 workers.

It was shown that more than 1,000,000 vehicles ran out of fuel; 8,500,000 had flat tires; 54,000 froze in cold weather; 800,000 bogged down in mud or snow; 4,500,000 were towed to repair shops; 5,400,000 had ignition trouble; 3,200,000 had battery trouble; 1,245,000 were wrecked or ran off the road; 2,000,000 had starter trouble; and 437,000 had carburetion difficulties.

Nebraska Jobber Opinion Sought on Iowa Plan

LINCOLN, March 23.—Nebraska Petroleum Marketers, Inc., is canvassing Nebraska jobbers for their opinion on the posting of normal service station prices, or discounting such postings.

Opinions are sought to guide the association in shaping a policy on the "Iowa" plan, whereby suppliers post only a tankwagon price to resellers, leaving posting of service prices to the dealers.

"We will probably take it as it is handed (the 'Iowa' plan) to us but can at this stage have considerable to say about it if a change is desired. . . .

"If you will give this some thought and decide whether the conditions are acute enough for a change, for better or for worse, and return the enclosed questionnaire, we would have some idea of what our membership of independent jobbers desires in the matter," the association's current bulletin said.

Nebraska Issues Ruling On Inspection Fees

LINCOLN, March 23.—To avoid payment of the Nebraska inspection fee on petroleum products sold outside the state the dealer must declare at the time products are brought into the state that the oils are not to be sold or distributed in Nebraska.

Such is the statement issued recently to Nebraska oil marketers by W. B. Banning, director of the department of agriculture and inspection, based on a decision of the state legal department.

A refund of the fee is not possible, Mr. Banning informed marketers, and to avoid payment the declaration of distribution outside the state must be made at the time the products enter the state.

"Under this decision," Mr. Banning's statement continued, "we will not grant or allow any deductions from the inspection fees paid to the state, beginning with the March report, due in April. This allows you the period of March in which to get straightened up."

Seeks Gas Tax Increase Of 2c in Maryland

NEW YORK, March 21.—Legislation action during the past week has been both favorable and unfavorable to the oil industry, with bills involving chain store taxes, gasoline taxes and blue laws being considered.

Favorable action was taken on Massachusetts H.B. 1556, which passed both Houses and was approved by the Governor. This bill repeals portions of the state's blue laws which prohibited almost all automobile repair work and lubrication on Sunday.

In Virginia a bill which prohibits towns and cities from levying local motor vehicle registration fees on non-residents of these cities is now before the governor for approval.

The Ways and Means Committee of the South Carolina House has reported out favorably a chain store tax bill which calls for annual payments of $5 for one store and $300 for each store over 60. This is an amended form of the original bill which called for a tax of $5 for one store and $500 for each store over 25.

A bill has been introduced in the Maryland House which would increase the state gasoline tax 2 cents a gallon. No action has yet been taken on the bill. The present state tax in Maryland is 4 cents a gallon.

Adopt Plan to Pay Gas Taxes in Georgia

ATLANTA, March 19.—To avoid making themselves liable for double payment of the gasoline tax, pending determination of the status of Governor Eugene Talmadge's de facto treasurer and controller general under the financial "dictatorship" established by the governor, Georgia oil companies, upon advice of counsel, have decided to make their regular monthly reports to the de facto controller general, as usual, but without enclosing check for payment as has been done heretofore.

Immediately, it is expected, the present controller general will declare a default and refer the matter to the state revenue commission which will issue an execution for the amount named in the report and payment can then be made by check direct to the state revenue commission. Such checks will be acceptable and paid by the banks, it is said. It is understood this plan is acceptable to the governor and has been agreed to by counsel for oil companies, as being legal in every respect.

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NEW BOOKS

Chemistry and Physics Handbook

The (20th) edition of the Handbook of Chemistry and Physics contains some of the most important revisions and additions ever made, its publishers state. Chief of these improvements is the new table of physical constants of organic compounds in which over 5500 compounds are listed. The form of this list has been altered to that of a running list which, although less convenient, is compensated for in completeness.

Comprising nearly 2000 pages including 300 of entirely new material, the book presents in ever increasing volume data of value to researcher and engineer. A new 30-page formula index of organic compounds, pronunciation guide for chemical words, rules for naming organic compounds, and prefix names of organic radicals all contribute to standardization and simplification in a field in which disorder has prevailed.

Properties of amino acids, revisions on data on X-ray spectra, and new material on magneto-optic rotation are given as well as new data in colorimetry and photometry.

The handbook is published by The Chemical Rubber Co., W. 112th St. at Locust Ave., Cleveland. Price $6.

* * *

Highway Users' Guide Announced

In a folder entitled, "LIFE'S TOO SHORT . . . By Cracky" the National Highway Users Conference, National Press Bldg., Washington, is announcing three new books of value to operators of motor trucks in interstate transportation service. They are published to make unnecessary the scanning of thousands of pages of states' statutes and motor vehicle codes, it is stated.

The first book presents data on state restrictions on motor vehicle sizes and weights. It shows, by means of graphs, the legal maxima as applied to tires axles, and wheels, or to the entire unit It contains 120 pages and is priced at $1.

Registration fees and special taxes are covered in the second book. Several charts present much of this data also. The book, containing 216 pages, may be obtained for $1.25, postpaid.

Whenever a question about mandatory equipment provisions comes up, the answer can be found in the third book, entiled "Automotive Equipment," the publishers state. A master chart shows at a glance the states which have adopted mandatory provisions relating to each of 20 items of equipment and indicates states in which periodic inspections and approvals are required. Single copies of 128 pages are priced at $1.

Among those on the advisory committee of this association is A. J. Byles, president of the American Petroleum Institute.

* * *

Metallurgical Dialogue

One can not fail to know about steel and its treatment after reading "Metallurgical Dialogue," by Albert Sauveur. On being drawn into the subject by the student's simple question of why steel hardens when plunged red hot into cold water, the reader is quickly acquainted with the way iron acts during heating and cooling when containing different proportions of carbon. From this point he is led gradually by steps into the many other phases of steel treatment and told of the effects of alloying with other metals in small proportions, being acquainted with the metallurgical terms as they are introduced in the discourse.

Questions in the reader's mind are foreseen and placed in the mouth of

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the student so that in the process of questions and answers the vagueness which may have hovered over the subject is dispelled. The unanswerable questions, such as the student's original questions, are labeled but this fails to leave the subject in darkness for the known facts which have led the development of steel treatment to its present stage are given and they light the path toward the future.

Metallurgical Dialogue, a book of 166 pages, is published by the American Society for Metals, Cleveland. Its price is $3.

* * *

The Chemistry of Synthetic Resins

The rapid development of synthetic resins in the past 12 years is responsible for the publication of "The Chemistry of Synthetic Resins" by Carleton Ellis, virtually a second edition of "Synthetic Resins and their Plastics." The minor as well as the major developments in the field of synthetic resins have been brought up to date in this text of over 1600 pages.

So exhaustive a treatment of the subject leads to a discussion of phases familiar only to the chemist for whom the material has been directed primarily. However, the technology of synthetic resins has by no means been overlooked and the discussion of the multitude of applications and testing of their suitability to these applications will be of interest and value as an encyclopaedic text to students, research chemists, and manufacturers, and to the whole field of technical operations where the search for special materials of fabrication is in progress.

In the field of petroleum, for example, are several chapters of direct interest: — resins from acetylene; polymerization of hydrocarbon olefins and diolefins, synthetic rubber; resins from petroleum; miscellaneous resins from hydrocarbons and from phenols. These chapter headings are in Volume I. In Volume II the diene synthesis and sulfur-olefin resins are treated.

In the chapters devoted to hydrocarbons will be noted the chemical processes by which the synthetic rubber substitute DuPrene was developed. Resins thus far obtained from petroleum have been found to be mostly of an inferior grade. However, at least one type, it is indicated, may have commercial significance. This obtained by the polymerization of highly cracked gasoline. Processes by which resins are obtained from petroleum even include the effect of light and the common gum formation.

Supplementing the detailed descriptions are a large number of references (estimated at 15,000), citations to periodicals either in English or foreign languages, as well as to patents. The index alone contains over 200 pages. Numerous illustrations are supplied through.

Published by the Reinhold Publishing Corp., successor to The Chemical Catalog Co., 330 W. 42nd St., New York, the price per set is $19.50. The volumes are not sold separately.

* * *

Natural Gasoline Survey Out

WASHINGTON, Mar. 6. — Two booklets, "Natural Gas" and "Natural Gasoline" giving detailed statistics on these two industries for 1934, have been published separately by the U. S. Bureau of Mines. Each is a statistical appendix to the Minerals Yearbook of 1935.

The summaries have the usual detailed statistics on production, consumption and stocks, prices and similar data. The booklet on natural gasoline reviews the liquefied petroleum gas industry also.

Copies may be had for 5 cents each from the Government Printing Office, Washington.

* * *

Townsend Scheme Explained

A study of all phases of the Townsend plan and its economic effects has been published by the National Industrial Conference Board, Inc., into a 42-page booklet entitled "The Townsend Scheme."

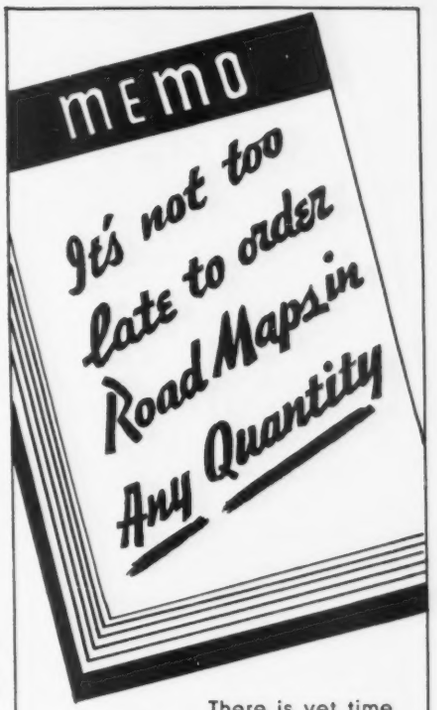
Presenting a brief but clear discussion of the plan and what it would involve, it seeks to point out the advantages claimed for it, how the plan would operate and how it would be administered, and describes, among other points, the effects of the widely-heralded 2%-per-transaction-tax on which woult hang the $20 billion annual expenditure the plan would make necessary.

Copies may be had for $1 from the board at 247 Park Ave., New York.

Safety Manual Nears Completion

NEW YORK—The draft of a proposed accident prevention manual for oil field workers, entitled "Precautions for Oil Field Work," has been placed before the general committee of the American Petroleum Institute's Division of Production for review and approval. It has already been approved and recommended for publication by the Committee on Accident Prevention in Production.

The manual, prepared under direction of the Department of Accident Prevention, presents safety ideas covering operation of power equipment, air compressors, and lifting equipment, and suggests precautions in gagging and delivering oil, cleaning tanks, and removing ice from flow lines. It also covers such subjects as the transportation of men, first aid, and fire fighting.



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TRANSACTIONS IN OIL STOCKS ON NEW YORK STOCK EXCHANGE

1935 High	1935 Low	1936 High	1936 Low	Listed Shares	Par Value	Company	Current Dividend	Last Div. Paid	Transactions Week Ended March 21 Sales Shares	High	Low	Last	Week's Change
80	48½	125	75	788,675	N.P.	Amerada Corp.	50cQ	Jan. 31, 36	5,400	120	112¼	114½	— 5½
44	29¾	51⅛	43	2,290,412	$25	Associated Oil Co.	20c	Dec. 31, 35	10	48	48	48	— ⅜
28	20½	34	27¼	2,696,652	25	Atlantic Refining Co.	25cQ	Mar. 16, 36	12,500	31⅞	30¾	30¾	— ¼
14¾	5⅞	18¾	14¼	2,258,779	5	Barnsdall Corp.	20c	Feb. 1, 36	29,900	17⅞	16⅜	17½	+ 1⅛
9⅞	6¾	18¾	8¼	1,444,970	N.P.	Colonial Beacon Oil Co.	....	....	5,850	22½	16½	20¾	+ 2¾
12¼	6½	15¾	11⅞	13,996,072	N.P.	Consolidated Oil Corp.	25c	Oct. 10, 35	85,400	15⅛	14⅛	14¾	+ ⅜
112½	108½	105½	101	132,771	$100	do pfd.	$1.25Q	Mar. 15, 36	....	....	....	....	....
35	15⅛	38½	33¾	4,722,652	5	Continental Oil Co.	25c	Jan. 31, 36	30,600	35½	33½	35½	+ 1
22½	11¾	34¾	22	413,333	$10	General Asphalt Co.	....	....	7,100	33¼	31	32⅛	+ ⅝
17¾	9½	....	....	95,841	100	Houston Oil Co.	....	....	....	....	....	....	....
7	1½	12¼	6¾	678,234	25	do v.t.c.	....	....	17,200	11⅝	11⅛	11¼	— ⅛
5¼	2⅛	8⅜	4⅛	1,207,132	10	Indian Refining Co.	....	....	1,000	6½	6	6	— ¾
1⅞	⅜	....	....	1,309,060	N.P.	Louisiana Oil Ref'g. Corp.	....	....	....	....	....	....	....
15	4½	17¾	13	40,000	$100	do pfd.	....	....	410	15⅜	14¾	15⅛	+ ⅜
3	1	6¾	2½	330,000	N.P.	Maracaibo Oil Exploration Co.	....	....	73,600	*6¾	5⅛	5⅞	+ ⅝
20½	9½	22	19¼	1,857,912	$10	Mid-Continent Pet. Corp.	25c	Dec. 2, 35	14,300	21⅜	19¼	20½	+ 1
14¼	9¼	17½	13½	6,563,377	N.P.	Ohio Oil Co.	15c	Dec. 14, 35	24,900	16⅜	15½	15⅞	— ⅛
21	10¾	20⅝	17	4,699,885	$5	Pan Amer. Pet. & Transp. Co.	....	....	....	....	....	....	....
1⅞	½	3⅝	1⅜	199,370	N.P.	Panhandle Prod. & Ref'g. Co.	....	....	1,100	2¾	2½	2½	+ ⅛
20	6½	34	18½	17,994	$100	do pfd.	....	....	80	31	29½	30	+ 1
14	7⅝	18	13⅝	2,153,444	5	Petroleum Corp. of America	33c	Oct. 31, 35	4,600	17½	16⅝	16¾	— ¼
40	13¾	46⅞	38⅛	4,439,450	N.P.	Phillips Petroleum Co.	25cQC	Feb. 29, 36	64,300	46⅞	42½	45½	+ 3⅛
1¼	¼	2¼	⅞	1,184,817	$25	Pierce Oil Corp.	....	....	....	....	....	....	....
8	2¾	17	8	150,000	100	do pfd.	....	....	2,300	14⅝	12½	13⅜	+ ⅝
1¾	⅝	2½	1½	2,500,000	N.P.	Pierce Petroleum Corp.	....	....	6,600	2¼	2	2	0
13	6½	15¼	11⅞	1,050,000	$5	Plymouth Oil.	25cQ	Mar. 30, 35	8,400	14¾	13⅝	14¾	+ ½
17	5⅞	24⅞	16⅝	3,038,370	N.P.	Pure Oil Co.	....	....	121,600	*24⅞	23¼	24¼	+ ⅝
103	34¾	115½	102⅛	167,640	100	do 6% pfd.	....	....	1,400	*115½	114	115½	+ 1½
119⅞	49⅝	132	115	130,000	$100	do 8% pfd.	....	....	1,320	*132	130	131	+ ¾
48½	29½	57	48⅜	425,342	a	Royal Dutch Co. (N. Y. shares)	$1.70	Aug. 1, 35	1,200	54⅜	53½	54	+ 1¼
36⅛	20¾	42½	33¼	1,244,383	N.P.	Seaboard Oil of Del.	25c	Mar. 14, 36	22,000	*42½	40⅜	40½	— 1½
39	20¾	45	38½	56,148	£2	Shell Transport & Trading Co.	$1.237	July 24, 35	....	....	....	....	....
16½	5½	19¼	15¼	13,070,625	N.P.	Shell Union Oil Corp.	....	....	11,600	18¾	17¾	18¼	— ¼
111	63¼	120	110½	400,000	$100	do pfd. w.w.	....	....	700	117	116¼	116⅝	+ ⅝
18¾	4¾	6¾	5	461,000	10	Simms Petroleum Co.	**$1.00	Jan. 27, 36	4,700	5⅛	5	5	— ⅛
20⅛	6½	30	19½	1,100,069	25	Skelly Oil Co.	....	....	18,800	*30	26⅞	29½	+ 1⅝
116¼	60	120⅛	116	120,000	100	do pfd.	....	....	1,300	*120½	115	119	+ 5½
15¾	10⅝	17	14½	31,701,348	15	Socony Vacuum Oil Co.	20c	Mar. 16, 36	65,100	15½	14⅞	15	— ⅛
116	111	113½	112½	764,925	100	S. O. Export Corp. pfd.	$2.50S.A.	June 29, 35	900	112½	112	112	0
41⅛	27¾	47⅝	39⅛	13,102,900	N.P.	S. O. California.	30c	Mar. 16, 36	33,200	46⅜	44½	46	+ 1⅛
33⅜	23	40⅛	32¾	15,215,677	$25	S. O. Indiana.	25c	Mar. 16, 36	31,500	39¾	37¾	38⅞	+ ⅞
32	20	30	28½	146,542	10	S. O. Kansas.	50c	Oct. 31, 34	100	26½	26½	26½	— ½
52⅜	35¾	70	51½	25,740,965	25	S. O. New Jersey.	75c	Dec. 16, 35	116,400	*70	65⅛	68⅛	+ 1⅞
77	60½	91	72	1,590,406	N.P.	Sun Oil Co.	25cQ	Mar. 16, 36	1,200	90	88¾	88¾	— ½
121	115½	122	118	100,000	$100	do pfd.	$1.50Q	Mar. 2, 36	60	122	120	120	— 2
3½	1⅝	6¾	3	966,979	$1	Superior Oil Corp. (Del.)	....	....	42,200	6⅝	6	6	— ½
30¼	16½	39	28⅛	9,851,236	$25	The Texas Corp.	25cQ	Jan. 1, 36	34,900	38¼	35⅛	37¾	+ 1¾
9¼	3¼	15¼	7½	930,570	10	Texas Pacific Coal & Oil Co.	....	....	19,300	13⅜	12⅜	12½	— 1
15⅞	7⅝	19⅛	14¼	5,998,919	N.P.	Tide Water Associated Oil Co.	25c	Jan. 15, 36	18,600	18¾	17¾	18⅝	0
104½	84	106½	100⅝	695,503	$100	do pfd. C. T. V.	$1.50	Jan. 15, 36	1,100	104½	103¾	104½	— ½
48	26¾	60	52	2,191,823	N.P.	Tide Water Oil Co.	50c	Dec. 31, 35	....	....	....	....	....
24	14¾	28⅛	23¼	4,386,070	25	Union Oil of California.	25cQ	Feb. 10, 36	9,000	27⅜	26	26	— 1⅜
26½	20¼	31⅝	22⅝	1,200,000	N.P.	Union Tank Car Co.	30cQ	Mar. 2, 36	1,300	28⅞	28¼	28⅞	— ⅝
1⅝	⅝	2⅞	1⅛	759,538	N.P.	Warner Quinlan Co.	....	....	1,900	2⅝	2¼	2¼	— ⅛
3⅛	1	4⅛	2¾	431,443	$5	H. F. Wilcox Oil & Gas Co.	....	....	2,100	3¾	3½	3¾	+ ⅛

*New high. †New low. x Ex-div. **Dividends of liquidation. ‡Stock dividend. a Par 33 1/3 florins.
C Paid 25c extra Feb. 20, 36.

STANDARD OIL STOCKS ON NEW YORK CURB MARKET

1935 High	1935 Low	1936 High	1936 Low	Shares Issued	Par Value	Company	Current Dividend	Last Div. Paid	Transactions Week Ended March 21 Sales Shares	High	Low	Last	Week's Change
16	6	18	13½	36,000	$25	Borne Scrymser Co.	50c	Oct. 15, 35	.....	....	....	....	....
42½	30½	50	39¾	200,000	50	Buckeye Pipe Line Co.	75cQ	Mar. 14, 36	50	44¼	44¼	44¼	— ¾
157	115	124¾	117½	120,000	25	Chesebrough Mfg. Co.	$2.00	Dec. 27, 35	100	119	119	119	0
23¾	10	34¾	19⅞	5,977,873	N.P.	Creole Petroleum Co.	20c	Dec. 31, 35	9,800	31	29¾	30	— ¾
38	33¼	44	39	50,000	$50	Eureka Pipe Line Co.	$1Q	Feb. 1, 36	.....	....	....	....	....
64	44	76½	62½	8,968,479	N.P.	Humble Oil & Refg. Co.	25cQ	Dec. 26, 35	7,100	74⅞	72¾	72⅞	— 1½
22½	15⅜	24½	20	26,919,871	N.P.	Imperial Oil Ltd.	‡25cS.	Dec. 2, 35	13,900	23⅜	21⅝	22⅞	+ 1¼
22½	15⅞	24⅜	20⅛		N.P.	do registered.	25cQ	June 1, 34	.....	....	....	....	....
6⅛	3⅜	9¼	5½	300,000	$10	Indiana Pipe Line Co.	20c**	Nov. 15, 35	100	7⅝	7⅝	7⅝	+ ½
39⅜	28	39⅜	33½	14,324,088	N.P.	International Pet. Co.	‡75c S.	Dec. 2, 35	7,400	37⅝	35⅝	36⅞	+ 1
10⅝	6¾	15¾	10¼	509,000	$12.50	National Transit Co.	35c	Dec. 15, 34	400	13	12½	12½	— ⅜
4⅞	3	6¼	4½	100,000	5	New York Transit Co.	15c S.A.	Oct. 15, 34	.....	....	....	....	....
8	5¼	9¼	7	120,000	10	Northern Pipe Line Co.	25c S.A.	Jan. 2, 35	100	7½	7½	7½	0
107¼	90¼	109¼	104⅛	562,122	100	Ohio Oil Co. pfd.	$1.50Q	Mar. 14, 36	500	108¾	108¼	108½	0
11	5½	8	8	400,000	25	Penn Mex. Fuel Co.	....	Dec. 22, 33	.....	....	....	....	....
5	3⅞	7⅞	4⅜	100,000	10	Southern Pipe Line Co.	15c	Mar. 2, 36	200	6	5¾	5¾	+ ⅛
34½	21⅝	38½	32½	1,200,000	25	South Penn Oil Co.	40c	Dec. 28, 35	2,400	*38½	37½	38⅜	+ 1⅛
56	45¼	58	54	35,000	50	South West Pa. Pipe Lines.	$1Q††	Dec. 31, 35	.....	....	....	....	....
24	18	23⅜	18⅜	2,604,790	10	S. O. Kentucky.	25c	Mar. 16, 36	8,200	20	†18⅜	19⅜	— 1⅛
12	7¾	14⅝	11½	188,403	25	S. O. Nebraska.	....	June 20, 34	400	13	12½	13	+ ½
23¾	11½	27¾	21¾	753,740	25	S. O. Ohio.	....	Apr. 16, 34	7,100	32¼	27	32	+ 5⅛
99½	89	104½	97	120,000	100	do 5% pfd.	$1.25Q	Jan. 15, 36	50	100¾	100¾	100¾	+ 1¼
6	2¼	6¼	5⅜	34,158	25	Swan Finch Oil Corp.	87½c	Mar. 17, 36	.....	....	....	....	....

*New high. †New low. ‡Imperial Oil Spec. 37½c Dec. 2, 35. International Pet. Spec. 50c Dec. 2, 35.
x Ex dividend. **15c regular; 5c extra. ††Paid $1 extra Dec. 31, 35.

M.I.T. Has Oil Course

CAMBRIDGE, March 20.—A training course for gasoline service station employes is being given at the Massachusetts Institute of Technology here under the direction of William G. Ball, petroleum marketing engineer. The course consists of eight lessons, once weekly in the evenings, and began Feb. 19. Charge is $4.

The object of the course is to give the filling station attendant and manager a semi-technical background about the oil industry and its products and to increase selling ability.

NEW YORK CURB BONDS

Week Ending Mar. 21

	High	Low	Last	Change
Cities Serv. 5s '50	78¼	73⅛	77½	+3⅛
Cities Serv. 5s '66	77½	73¼	76¾	+2¼
Cities Serv. G. 5⅛s '42	101¼	100⅜	101	+ ½
Empire O & R 5⅛s '42	88	85½	87½	+1⅝
Gulf Oil 5s '47	107¼	106⅞	107	+ ⅛
Valvoline Oil 7s '37	99	98½	99	— ½

OIL AND ROYALTY STOCKS ON NEW YORK CURB

1935 High	1935 Low	1936 High	1936 Low	Par Value	Company	Transactions Week Ended March 21 Sales Shares	High	Low	Last	Week's Change
½	3/16	1 7/16	½	N.P.	American Maracaibo	26,500	1 1/2	1 1/4	1 1/2	+ 1/8
3 7/16	5/8	7 5/8	3 1/4	N.P.	Arkansas Nat. Gas	25,500	*7 5/8	6 1/4	7 1/2	+ 1
3 3/4	5/8	7 3/4	3 1/4	N.P.	do A	120,700	*7 3/4	6 1/2	7 1/2	+ 1
7 1/2	2 1/4	9 1/8	7 1/8	$10	do pfd	15,700	*9 1/8	7 7/8	9	+ 1 1/8
16 1/4	14 1/2	24	16 1/2	N.P.	British Amer. Oil coup.	100	23	23	23	+ 2 1/8
4 1/4	1 5/8	4 7/8	2 1/2	$1/4	Carib Syndicate	7,100	3 3/4	3 5/8	3 5/8	0
3 1/2	3/4	7 3/8	3	N.P.	Cities Service	133,500	5 3/4	4 7/8	5 5/8	+ 5/8
47 1/4	6 1/2	55 7/8	41 1/2	$100	do pfd	6,400	55 1/4	46 5/8	55	+ 7 1/4
4 3/8	5/8	6 1/2	4	10	do pfd. B	400	5	4 7/8	5	+ 5/8
43	6	54	42	100	do pfd. BB	190	49	41 1/2	48	— 2
2 1/8	1/2	4	1 1/8	N.P.	Colon Oil Corp	15,200	3 5/8	3 1/8	3 1/8	— 1/2
1 1/2	1/8	5 1/8	3/4	N.P.	Columbia Oil & Gas vtc.	46,600	*5 1/8	4 1/4	5 1/8	+ 5/8
3	1	3 1/8	2 1/8	$1	Consolidated Royalty	200	2 7/8	2 7/8	2 7/8	+ 1/4
1 1/2	1/4	4 1/8	1 1/2	N.P.	Cosden Oil	16,100	3 5/8	2 3/4	3 1/2	+ 1/2
6 1/4	3/4	17	6 1/2	$100	do pfd	1,300	15	14	14 1/2	+ 1 1/4
2 1/8	5/8	2 3/4	1 3/4	N.P.	Crown Central Pet.	12,900	2 3/8	2 1/8	2 3/8	0
8 7/8	4	11	9	N.P.	Darby Petroleum	500	10	9 5/8	10	+ 1/4
2	3/4	3 3/4	1 7/8	N.P.	Derby Oil & Refg.	1,200	3 1/2	3 1/8	3 1/4	— 1/8
20	20	25 1/2	25 1/2	N.P.	do pfd	.....	.....	.....	.....	.....
74 3/4	50 1/4	98	72	$25	Gulf Oil Corp.	9,300	97 3/4	93 1/2	95	— 1 1/2
4 1/4	1 3/8	6 1/4	3 1/4	N.P.	Indian Ter. Illg. Oil A	100	5	5	5	0
4 1/4	1 1/8	6 1/2	3 1/4	N.P.	do B	800	5	4 3/4	5	— 1/2
3	1 1/8	5 1/8	2 1/8	N.P.	Kirby Petroleum	2,000	4 1/2	4 1/8	4 1/4	0
3/4	1/4	2	1/2	$25	Leonard Oil Dev.	4,800	1 1/2	1 3/8	1 3/8	— 1/8
8 1/4	3 1/2	11 3/4	7 3/8	N.P.	Lion Oil Refg.	1,100	11	10 1/4	10 5/8	+ 3/8
10 7/8	4 1/2	14 1/4	9 7/8	N.P.	Lone Star Gas	4,700	14	13 1/4	13 1/4	— 1/4
19	4	21 1/2	14	N.P.	Margay Oil Co.	2,900	*21 1/2	20	21 1/2	+ 4 1/8
2 3/4	7/8	4 1/8	1 7/8	N.P.	Mexico-Ohio Oil	200	3 1/2	3 1/2	3 1/2	— 1/8
3 3/8	1 7/8	3 1/4	1 7/8	N.P.	Michigan Gas & Oil	1,000	3	2 1/2	3	+ 3/8
3 7/8	7/8	6	3	N.P.	Mid. States Pet. A vtc.	1,300	4 7/8	4 5/8	4 5/8	— 1/8
1/2	1/4	2 5/8	1/4	N.P.	do B vtc.	1,300	1 5/8	1 1/2	1 5/8	0
1/2	1/4	1/2	1/4	$1	Mountain & Gulf	6,800	5/8	3/8	1/2	— 1/8
5 3/4	4 1/4	8 3/8	5	10	Mountain Producers	1,500	7 3/8	7 1/8	7 1/8	— 1/8
20	11 3/4	23	19 1/4	N.P.	National Fuel Gas	1,800	21 5/8	21	21 5/8	+ 1
3 1/4	2	4 1/2	2 7/8	$5	New Bradford Oil	1,100	3 1/4	3 1/8	3 1/4	+ 1/8
4	2	8 3/8	3 3/8	N.P.	North Central Texas	3,900	7 1/2	6	7 1/2	+ 1 1/2
1/2	1/8	1/8	1/8	N.P.	North European	1,800	3/8	5/16	3/8	0
12 3/4	9 1/8	15 1/4	14 3/4	N.P.	Oil Stocks Ltd. A	100	15 1/8	15 1/8	15 1/8	+ 1/8
4 5/8	1 1/4	6 1/8	3 1/4	N.P.	Pantepec of Venezuela	19,800	5 1/4	5	5 1/8	— 1/8
1/8	1/8	1	1/4	N.P.	Producers Royalty	2,890	3/8	5/16	5/16	0
70	34 3/4	.....	.....	$100	Pure Oil 6% pfd	.....	.....	.....	.....	.....
3 1/4	1/2	7 1/2	3	N.P.	Red Bank Oil	1,500	6 3/4	6	6 1/2	— 1/2
1/2	1/8	1	1/8	N.P.	Reiter-Foster Oil	1,100	7/8	3/4	7/8	+ 1/8
2 7/8	1/2	2 3/4	1 1/2	$25	Richfield Oil pfd	2,900	2 1/4	2	2 1/8	+ 1/8
5	1 1/2	13 1/2	4 1/8		Root Petroleum	30,100	*13 1/2	11 7/8	13 1/2	+ 1 5/8
15 1/8	8	20 1/4	14 1/2	10	do conv. pr. pfd	300	19 1/2	19 1/8	19 1/8	+ 1/8
.....	.....	39 1/4	36 1/2	$10	Royalty Corp. pfd	100	35	35	35	— 3 1/4
2 1/8	5/8	3 1/8	1 7/8	N.P.	Ryan Consolidated	1,000	2 3/4	2 3/8	2 3/4	+ 1/4
1	1/8	2 1/8	1/2	$10	Salt Creek Consolidated	2,600	1 1/4	1	1	— 1/8
7 1/2	5 1/2	10	7	10	Salt Creek Prod.	1,000	8 1/4	8 3/8	8 3/8	— 1/8
6 7/8	4 3/4	9	6 1/4	N.P.	Southland Royalty	7,900	10	8 1/2	10	+ 1 5/8
2 7/8	7/8	4 1/4	2 5/8	$5	Sunray Oil	8,700	3 1/2	3 1/4	3 1/4	— 1/4
4	2	5 3/4	4 1/4	$1	Swiss Oil Corp.	10,500	5 1/4	5	5 1/8	+ 1/4
6 7/8	5	9 3/4	4 1/2	N.P.	Texon Oil & Land	3,000	8 1/4	7 1/2	7 1/2	— 3/4
2 1/4	1/8	3	1 1/2	$5	Venezuela Petroleum	4,800	2 3/8	2 1/8	2 1/8	— 1/8
6 1/8	3 1/2	8 7/8	5 5/8	1	Woodley Petroleum	1,800	8 1/4	7	8 1/4	+ 1

*New high. †New low.

NEW YORK BONDS

Week Ended March 21

	High	Low	Last	Change
Atlantic Refg. deb. 5s	105 3/8	105 3/8	105 3/8	0
Houston Oil 5 1/2s '40	103	102 1/4	102 1/4	— 3/4
Pan Amer. Pet. of Calif. 6s '40	52 1/2	52 1/2	52 1/2	— 1/2
Pan Amer. Pet. of Calif. 6s ctfs	52	50	50 1/4	+ 1/4
Pure Oil 4 1/2s '50 w.w.	131 1/2	126 3/4	130	+3
Pure Oil 4 1/2 s '50 w.	102 3/4	102 1/2	102 3/4	0
Richfield Oil of Calif 6s	42 1/2	40 3/4	41 1/2	+ 1/2
Richfield Oil of Calif. 6s ctfs	42	40	41	0
Shell Union Oil 5s	102 1/4	102 3/32	102 3/32	— 3/32
Shell Pipe Line 5s '52	102 7/8	102 21/32	102 21/32	— 11/32
Skelly Oil 5 1/2s	97 1/2	96 3/4	97	0
Socony-Vacuum 3 1/2s '50	105 1/2	104 1/2	105	+ 1/2
Union Oil of Calif. 6s A	122	121 1/2	122	+ 1/4
Union Oil of Calif. 4s	120	119	119	— 1/4
Warner-Quinlan 6s	41 3/4	39 3/8	39 1/2	— 3/4

OIL DIVIDENDS

Dividends Waiting Payment

Company	Amount	Record	Payable
Autoline Oil pfd. q	20c	Mar. 25	Apr. 1
Barnsdall Corp. extra	5c	Apr. 10	May 1
Barnsdall Corp. q	15c	Apr. 10	May 1
Borne-Scrymser special	50c	Mar. 20	Apr. 15
Canfield Oil pfd. q	$1.75	Mar. 20	Mar. 31
Chesebrough Mfg. q	$1.00	Mar. 6	Mar. 31
Chesebrough Mfg. extra	50c	Mar. 6	Mar. 31
Consolidated Oil	25c	Mar. 11	Apr. 1
Continental Oil	25c	Apr. 6	Apr. 30
Gulf Oil Corp. resumed	25c	Mar. 14	Apr. 1
Humble Oil & Refg. q	25c	Mar. 2	Apr. 1
McColl Frontenac pfd. q	$1.50	Mar. 31	Apr. 15
South Penn Oil extra	12 1/2c	Mar. 16	Mar. 31
South Penn Oil q	37 1/2c	Mar. 16	Mar. 31
Standard of Ohio pfd. q.	$1.25	Mar. 31	Apr. 15
Swiss Oil extra	5c	Mar. 25	Apr. 10
Swiss Oil q	5c	Mar. 25	Apr. 10
Texas Corp. q	25c	Mar. 6	Apr. 1
Tide Water Assoc. pfd. q.	$1.50	Mar. 12	Apr. 1

PITTSBURGH STOCK EXCHANGE

Transactions week ended *March 20, 1936

	Sales	High	Low	Last	Change Over Week
Ark. Nat. Gas	15	6 1/2	6 1/2	6 1/2	— 3/8
do pfd	515	8	7 3/4	8	+ 1/8
†Cities Serv	584	5 1/4	5	5 1/4	+ 3/8
Col. Gas & Elec.	681	19	17	18 1/2	+1 5/8
†Col. Oil & Gaso. VTC	16	4 1/4	4 1/4	4 1/4	+ 1/4
Devonian Oil	50	20	20	20	+ 1/2
†Gulf Oil of Pa.	200	97	97	97	+12 1/2
Lone Star Gas	1,967	14	13 1/2	13 3/4	+ 1/2
† do 6 p.c. conv. pfd	35	106	106	106	0
Mountain Fuel Supply	658	6 7/8	6 5/8	6 7/8	+ 1/8
Phoenix Oil	1,960	.08	.07	.07	— .01
Pgh. Oil & Gas	200	1 1/2	1 1/2	1 1/2	0
Shamrock Oil & Gas	5,875	4 3/4	4 1/2	4 5/8	+ 1/4
†Standard Oil of N. J.	618	67	65 1/8	66 5/8	+1 3/4

†Unlisted.

*Covering transactions for only 3 days, March 14, 16 and 17; Pittsburgh Stock Exchange closed March 18, 19 and 20 on account of floods.

CLEVELAND STOCK EXCHANGE

Transactions Week Ended March 21, 1936

	Sales	High	Low	Last	Change Over Week
Canfield Oil	15	38	38	38	+2
do pfd	.....	.....	.....	.....	.....
Nat'l Refining	4,960	8 1/2	6 7/8	8 1/8	+1 1/4
do pfd	111	77	75	76	+7

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Phillips Petroleum Co. Nets $3.23 Per Share, Highest Since 1926

ALL TIME records were broken by every department of the Phillips Petroleum Co. in volumes of production and sales, Frank Phillips, president, told stockholders in reporting on the company's activities in 1935. Gross operating income increased more than 19½ per cent as compared with 1934. At the same time, as the result of increased efficiency, operating and general expenses increased less than one per cent, although the volume of production and sales increased more than 9 per cent.

Net profit for 1935, after all charges, was $13,421,703, the highest since 1926, equal to $3.23 a share on 4,152,836 shares of no-par capital stock. In 1934 net profit was $5,757,308, equal to $1.38 a share.

The report showed that the company's financial position was substantially improved. By bond retirements and refunding operations, interest charges were reduced so that they will be approximately $1,200,000 less in 1936 than they were in 1935. This reduction is equal to 29 cents a share.

Current assets increased more than $4,450,000 during 1935 amounting to $13,512,617 at the year end. This amount exceeds all indebtedness, both current and long-term, by more than $2,500,000.

Capital expenditures for improvements and additions to properties, plants, and equipment amounted to $16,430,367. These expenditures in effect replaced $10,940,133 of properties retired during the year, and increased the company's investment $5,490,234 to $279,107,647, after retirements and losses, at the year end.

Net production was 20,058,704 barrels compared with 18,353,192 the year before. Of the 193 wells completed 142 produced oil, 16 produced gas, and 35 were dry. At the end of the year 3162 oil wells were producing and 133 were being used for intake purposes in repressuring old properties to increase production and ultimate recovery. The company owns, in whole or part, oil and gas leases covering 1,219,258 acres. Its net interest in leases at the end of 1935 was 996,013 acres, of which approximately 3½ per cent had been brought into oil production.

Crude runs to still totaled 13,178,853 barrels, an increase of 4.2 per cent over 1934, yet gasoline production increased 11 per cent. Total output of motor fuel, including natural gasoline blended, was 11,779,267 barrels, compared with 10,778,380 barrels in 1934.

Mr. Phillips pointed out that the company's new chemical treating processes have effected reductions in cost and improvement in quality of motor fuels and lubricants. The expansion of polymerization operations has been notably successful in increasing the yield of high quality gasoline, he said.

About 268,207,365 gallons of 26-70 natural gasoline were produced by the company's 35 natural gasoline plants from casinghead and natural gas from company owned leases or purchased from others.

The company owns a 50 per cent stock interest in the Texas-Elf Carbon Co. which operates the largest carbon black plant in the world. This and other carbon black companies, which purchase considerable of the company's natural gas, manufactured about 43 per cent of the carbon black made in the country.

Phillips and its subsidiaries used every form of modern transportation in moving their products in 1935. They own 2532 tank cars; 495 trucks; and 736 miles of pipeline for shipment of gasoline from Borger, Tex. to East St. Louis, Ill. This line handled 11,984,871 barrels of gasoline in 1935. Great Lakes Pipe Line, an affiliated company, operates 1481 miles of gasoline pipeline, extending from Mid-Continent refineries to Kansas City, Kan., Des Moines, Omaha, Minneapolis, and Chicago.

Wholly owned subsidiaries were operating 1430 miles of pipe for gathering and transporting crude at the end of the year. During the year 27,699,475 barrels of crude were handled of which 13,185,295 barrels were delivered to the company's own refineries.

By close attention to efficiency and economy, Mr. Phillips said that the marketing division was able to effect a notable reduction in operating costs, with a gratifying increase in division earnings. Volume of finished products sold totaled 806,153,176 gallons (exclusive of liquefied petroleum gases) as compared with 744,428,370 in 1934.

Phillips products are marketed directly to consumers at approximately 12,600 outlets. Polymerized gasoline gained an outstanding acceptance and made many new customers. "The continued improvement in quality of the company's products effectively supplemented the efforts of the division. There was a marked shift in volume of business from lower priced motor fuel to the popular '66'," Mr. Phillips stated.

The Philgas division of the company continued its rapid growth, and through it the company led the industry in sales of liquefied petroleum gas. The volume of liquefied gases sold by tank car direct to large industrial concerns for heat-treating operations increased 57 per cent over 1934.

Mr. Phillips asked his stockholders to protest to their legislative representatives the ever increasing burden of taxes being levied by government. He pointed out the greatly disproportionate amount of taxes being loaded on the oil industry, and how it affects the stockholder.

"The total taxes paid to Federal, State, and local governments in connection with the business done by th's company, in 1935, amounted to about $19,500,000, or approximately the same sum as the company paid in wages and salaries, or $4.68 per share; nearly four times the amount paid to stockholders in dividends," Mr. Phillips explained.

In conclusion, Mr. Phillips said that he hopes that the conclusions of the Interstate Compact Commission will be helpful in maintaining equilibrium between supply and demand for crude.

Consolidated income account for year 1935 compares as follows:

	1935	1934
Gross oper. income	$92,748,873	$77,519,908
Other income (net)	690,406	81,576
Total income	$93,439,279	$77,601,484
Costs, exp., and tax	62,557,138	55,048,662
Interest, etc.	1,854,396	1,571,586
Intang. devel. costs	2,367,340	2,343,322
Depl. and amort.	3,577,739	3,650,806
Depreciation, etc.	9,369,963	9,329,800
Net profit	$13,421,703	$5,757,308
Dividends	5,188,780	4,153,008
Surplus	$8,232,923	$1,604,300

Consolidated balance sheet of Phillips and subsidiaries as of Dec. 31 compares as follows:

Assets	1935	1934
Cash	$8,249,122	$6,160,012
Accts. and notes rec., after reserve	5,774,118	5,259,153
Crude and refined prod.	16,407,883	14,506,680
Mat. and supplies	3,081,494	3,097,141
‡Stock of and adv. to affil. companies, etc.	§2,434,318	2,099,434
†Plant and property	137,258,621	136,992,626
Deferred charges	1,282,217	1,339,944
Total	$174,487,773	$169,454,990
Liabilities		
Accts. payable	$5,195,859	$3,946,718
Notes pay. (1936)	5,000,000	.....
Serial notes	14,000,000	.....
Notes payable (curr.)	75,000	.....
Def. pur. oblig.	1,945,222	511,309
Def. pur. oblig. (curr.)	642,047	354,107
Accruals	4,149,444	2,522,009
Insurance res.	1,000,000	999,425
Cont. reserve	108,184	509,189
Deferred credits	462,448	454,640
Capital stock	*119,955,533	119,955,563
Funded debt	.....	25,882,000
Earned surplus	21,954,036	13,721,113
Total	$174,487,773	$169,454,990

*Represented by 4,152,836 no-par shares. †After depreciation and depletion. ‡Includes marketable securities. §After reserves.

* * *

Colonial Beacon Shows Loss

NEW YORK, March 18. — The Colonial Beacon Oil Co. and its subsidiaries showed a net loss in 1935 of $2,941,627 after deducting charges for depreciation, amortization and retirements amounting to $1,881,785, according to the company's annual report. Net loss in 1934 was $3,125,645.

The company retired all of its out-

standing ten-year 6 per cent sinking fund gold debenture bonds during the year. This redemption was made possible, the report states, through an increase in the loan from the Standard Oil Co. of New Jersey, the parent company. At present the Colonial Beacon has loans amounting to $30,197,905 from the Jersey Standard, the report shows.

The Colonial's gross operating income during 1935 was $39,613,254. Costs, operating, selling and general expense was $40,006,490. Taxes paid by the company were $590,233.

* * *

Consolidated Oil Corp.

NEW YORK — Consolidated Oil Corp. reports for 1935 net profit of $11,306,904, equal after deducting $925,998 dividends paid on 8 per cent stock including dividends to Jan. 15, 1936, on stock called for redemption, to 74 cents a share on 13,988,287 no-par shares of common stock. This compares with net profit in 1934 of $553,282, equal to $5.43 a share on the 8 per cent preferred.

The position of the corporation, according to the statement sent to stockholders by H. F. Sinclair, chairman of the executive committee, was strengthened by the purchase of the Richfield Oil Corp. of New York at a cost in excess of $4,400,000.

Mr. Sinclair reported payment of $3,495,087 in common dividends and of $925,998 for current and accrued preferred dividends; expenditure of $16,600,000 for capital improvements; and purchases of preferred stock and retirement of bonds in the sum of $2,800,000, taken from treasury funds. Despite these disbursements, the corporation ended the year with an increase in cash of $5,754,026 and with no reduction in working capital.

The corporation retired $48,781,700 of 6½ per cent and 7 per cent bonds during the year. This was accomplished by obtaining loans from banks in the amount of $40,000,000 at an average rate of interest of 2.68 per cent, together with funds provided out of its treasury. Therefore, the corporation now has no bonds outstanding.

Consolidated participated in the drilling of 434 wells, of which 358 were wholly-owned. These together with its interest in partnership wells were equivalent to 382 wholly-owned wells. Under the restrictions of proration, the allowable from these wells was only 16,000 barrels daily, an average of 42 barrels per well. Total production of the corporation for the year was 26,000,000 barrels.

Consolidated income account for year 1935 compares as follows:

	1935	1934
Gross oper. earn.	$187,770,101	$168,425,582
Costs and expense	154,716,643	146,240,618
Oper. profit	$33,053,458	$22,184,964
Other income (net)	1,927,078	1,363,602
Total income	$34,980,536	$23,548,566
Interest	2,412,572	3,107,766
Depr., depl., aban., etc.	20,451,500	19,180,523
Federal taxes	809,560	706,995
Net income	$11,306,904	$553,282
Pfd. divs.	*925,998	822,352
Com. divs.	3,495,087	5,886,370
Surplus	$6,885,819	†$6,155,440

*Including dividends on 8% preferred stock to Jan. 15, 1936, on stock called for redemption. †Deficit.

Consolidated balance sheet of Consolidated and subsidiaries as of Dec. 31, compares as follows:

Assets	1935	1934
*R. E., oil and gas leases, oil wells, eq., pipe lines, etc.	$200,965,256	$208,402,801
Invest. and advances	27,433,132	22,657,334
Insurance funds	.....	3,774,088
Cash	30,143,202	24,389,176
Marketable secur.	859,126	936,689
Special deposits	501,889	173,033
Notes and accts. rec., after res.	13,109,538	12,209,710
Bal. in closed banks, less res.	.....	.....
Inv. of cr. and ref. oils	45,467,908	49,718,345
Mat. and supplies	6,545,474	6,279,615
§Long term notes and accts. rec., etc.	1,037,828	992,927
Adv. pay. to foreign govt's rec. through future taxes	.....	.....
Com. stock in treas.	‡2,876,388	2,763,262
Def. and unadj. items	2,130,810	1,719,300
Total	$331,070,551	$334,016,280
Liabilities		
8% pfd. stock	$6,039,990	$10,184,400
$5 pfd. stock	5,011,900	.....
†Common stock	71,094,175	71,094,175
Funded debt	.....	45,661,200
Purch. money oblig. (not current)	181,938	1,681,816
Bank notes payable (not current)	40,000,000	.....
Notes payable	.....	.....
Accts. payable	14,462,135	14,659,495
Divs. payable	85,541	.....
Purch. money oblig. (current)	504,879	553,096
Int., taxes and misc. accruals	3,197,142	3,394,599
Reserves	9,952,648	11,388,458
Capital surplus	165,584,086	166,007,239
Earned surplus	14,956,117	9,391,802
Total	$331,070,551	$334,016,280

*After depreciation and depletion. †Represented by 14,218,835 no-par shares, including shares in treasury. ‡Consists of 235,548 shares, at cost. §Includes balances in closed banks.

* * *

Approve Barnsdall Merger

NEW YORK, March 18.—Stockholders of the Barnsdall Corp. voted to approve the merger with the Barnsdall Oil Co. and the change to that name effective on March 13, at a meeting at Wilmington, Del., today.

D. R. Snow, geologist and production engineer, was elected a director to succeed George D. Locke. Other retiring directors were re-elected.

The Barnsdall Corp. declared an extra dividend of 5 cents a share on the common stock in addition to the regular quarterly dividend of 15 cents.

The corporation has notified the New York Stock Exchange that it intends to transfer 104,348 shares of treasury stock to stockholders of another company to pay for the entire capital stock of that company. The company to be purchased owns valuable oil leases in Oklahoma and through the transaction the Barnsdall company will acquire these leases for its own operation, it was stated.

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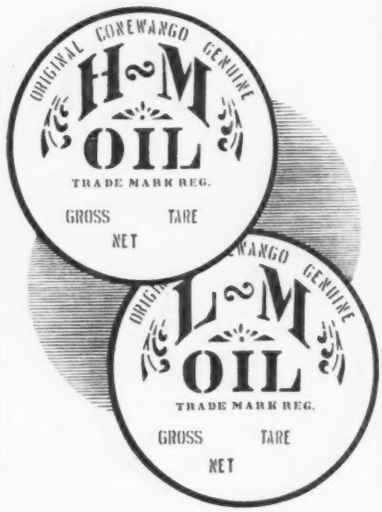

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In Tune With the Times

People who get out in the world and go places will find many contrasts between fiction and fact. Said the city girl: "And I suppose at dusk, when the sun is stealing over the Rockies in purple splendor, you cowboys are huddled around the campfire broiling venison and listening to the weird, eerie, unnatural howlings of the coyotes."

Rattlesnake Gus: "Well, ma'am, not ezzackly. Usually we get in our cars and listen to Dick Powell on the radio."

—Herk U. Lee's Log Book, Hercules Supply Co.

—NPN—

Stranger at crossroads store: "Who's the close-mouthed fellow over there in the corner? He hasn't spoken a word for the last fifteen minutes."

Another Village Loafer: "Him? That's Pete Blackmore. He ain't close-mouthed—he's jess waitin' the storekeeper to bring back the spittoon."

—The Diamond, Mid-Continent Petroleum Corp.

—NPN—

Trifling Mortgage

"I'm sorry," said the diner, who hoped to get away with it, "but I haven't any money to pay for that meal."

"That's all right," said the cashier. "We'll write your name on the wall and you can pay the next time you come in."

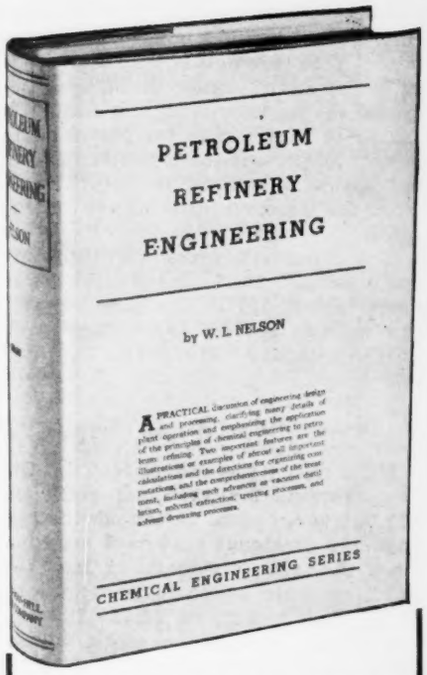
"Don't do that. Everybody who comes in will see it."

"Oh, no, they won't. Your overcoat will be hanging over it."

—The Diamond Mid-Continent Petroleum Corp.

"Oh. So that's what that ducky little button is for!"

—The Sunoco Diamond



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